AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

Pharmacy

THE ROAD TO INCREASED SALES LEADS TO STALFORT FOR . . . . .

CUSTOM PACKAGING

Stalfort can manufacture your formula, liquid or powder aerosol concentrate and fill with an inert compressed gas or conventional propellant.

Pastes, liquids, or powder manufactured and packed in conventional containers.

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Manufacturing Chemists since 1868

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THIS MONTH'S COVER

Brass aerosol caps are being processed at the Danbury plant of Risdon Manufacturing Co. After having been buffed, the caps are ready to be lacquered. The two women in the foreground inspect the caps as they place them on a belt moving into the lacquer-spraying booth. As the caps emerge from the spray and drying area they are inspected again by two other operators at this machine. All operators wear gloves throughout the finishing process to prevent fingerprints or other handling imperfections.

A story on Risdon's operations appears on page 20.

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AEROSOL AGE

The magazine of pressure packaging

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Are You Investigating

PHARMACEUTICALS IN AEROSOL CONTAINERS?

POLYMYXIN

HYDROCORTISONE

VITAMINS

NEOMYCIN

A Progress Report from Pfizer, a Pioneer in Antibiotics.

Day by day the list of successful pharmaceutical products packaged in aerosol containers increases. Have you examined this new development?

For some months now, Pfizer has been working in close cooperation with the aerosol industry, seeking areas where pharmaceutical manufacturers could best be served by aerosol packaging.

Pfizer found that aerosol packaging shows great promise for a number of medicaments. But, of particular and immediate value to you will be information obtained on topical aerosol preparations utilizing Pfizer Hydrocortisone, and the antibiotics—neomycin and polymyxin. Initial experimentation with nitrogen propelled vitamin preparations also shows promise. Should your topical plans include polyvinyl components, Pfizer's results with its non-toxic plasticizers, Citroflex® A-2 and A-4 will prove of value to you.

The acceptance of aerosol pharmaceuticals is based on their several advantages over traditional packaging:

Application is fast, convenient, uniform • Air tight containers prevent contamination • Direct contact with injured area is eliminated, often reducing pain • No waste, intermediate applicator unnecessary • Not affected by atmospheric conditions—leading to greater stability of active ingredients • Dosage may be controlled accurately with metered valves.

Pfizer will continue to pursue methods of developing successful pharmaceutical formulations for aerosols.

Manufacturing Chemists for Over 100 Years

Pfizer

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As the largest producer of perfume materials in America, Givaudan maintains special laboratories devoted exclusively to the development of new and finer aerosol fragrances and the solution of problems in aerosol perfuming.

Our staff will gladly recommend, adapt or custom-tailor a fragrance that will give your aerosol insecticides a fresh, distinctive appeal in this fast-growing, highly competitive market.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.
321 West 44th Street, New York 36, N. Y.

from the

EDITOR'S MAILBAG

To the Editor:

You will be pleased to know that aerosols have had a tremendous upward surge in Sweden during the past 12 months. Our production, covering the major part of Swedish made aerosols, has increased to such an extent that we have "outgrown our clothes." We have moved our plant from Norrkoping to Stockholm, where we can now take advantage of four times as much space as before. This has enabled us to double our filling facilities, both refrigeration and pressure lines. Our laboratory has been enlarged and a new product development department has been established.

New people have joined us, new eager readers of *Aerosol Age*. Would you please be kind enough to increase our group subscription from three to five copies?

D. H. Steiner
SKANDINAVISKA AEROSOL AKTIEBOLAGET
Stockholm, Sweden

•

To the Editor:

We are very thankful to the Pegasus International Corp., New York, which has very kindly given us your address as one of the leading publishers of information on aerosol packaging.

We are insecticide manufacturers and it is our desire to start packaging aerosols in our country. Since we are new in this business we have written to our friends at Pegasus to give us the name of a good magazine—one that will give us up-to-date information on aerosol packaging. Please send us a specimen copy of your publication and an invoice so that we can subscribe.

B. S. Trading Co.
Dacca, East Pakistan

A sample copy is being sent under separate cover. We thank you for your kind remarks about our magazine.—The Editor.

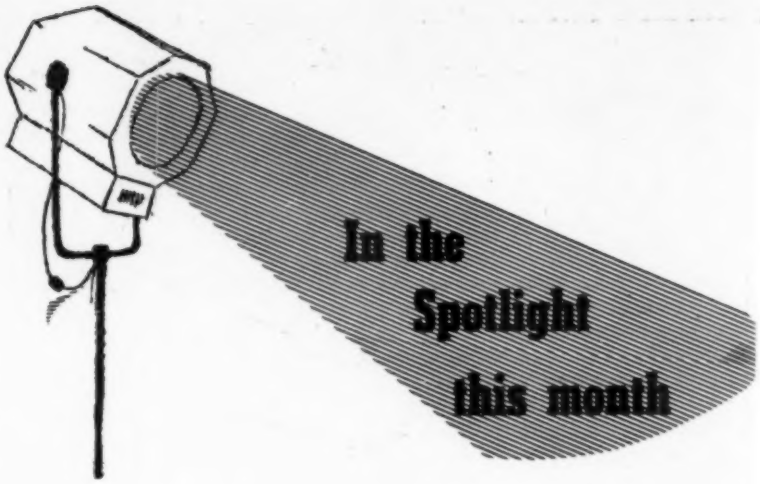
•

To the Editor:

In the "Pressure Packaging Overseas" column of your May issue, you make mention of a "mono-block container machine."

We wish to draw attention to the fact that the name "Mono-Block" is a registered trade name of the Baldwin-Hill Co. In future articles, we would prefer to have you use some other name for this piece of equipment to prevent confusion.

Stewart Byrne
Advertising Manager
Baldwin-Hill Co.
Trenton, N. J.



• **Risdon Valve** . . . A pictorial visit is paid to probably the largest manufacturer in the world of specialty-type aerosol valves. Quality control, manufacturing processes, and the history of the company's entry into the aerosol field are discussed in a special article beginning on page 20.

• **Label Design for the Direct Selling Aerosol** . . . The role of motivation research, which is becoming a key factor in aerosol package design, is reviewed by the designer for the new Electrolux line, in an interview on page 27.

• **Packaging Requirements for Pressure Food Products** . . . Three American Can researchers, in a technical article beginning on page 28, report on some basic (and some entirely new) considerations for the pressure packaging of a food product.

• **Food and Drug Commissioner Chides Industry on Advertising Practices** . . . Two leading government officials, at TGA convention in Maine, distinguish between "good" and "improper" practices in advertising cosmetic and drug products. Meeting report on page 32.

• **Aerosols in Great Britain** . . . Some unique new products from Britain, including the first car wax and several agricultural products, are described on page 34.

• **New Aerosol Powder Formulation** . . . A patented aerosol powder formulation that neither clogs nor cakes is offered for private label packaging by a St. Louis firm. Story on page 37.

• **Aerosols in Finland** . . . The second installment of Yrgo Talvitie's excellent summary of conditions in the Finnish industry, together with a report on the new Finnish Aerosol Association, begin on page 48.

EDITORIALS

Complications of Success . . .

In the "Aerosols in Review" column in this issue (on page 44) there appears a warning by the British periodical *Fire* on the potential hazard of exploding aerosol cans to firemen fighting store fires. Last month and the month before this column has been devoted to a discussion of the hair spray controversy, and whether or not aerosols actually DO constitute a health menace because of possible inhalation effects. Last year a good many words were expended on the glass aerosol controversy, and what to do about the disposal of used aerosol containers.

Though it may appear that these problems are coming with increasing frequency of late, and that all is not well in the industry, this spate of problems actually can be more accurately interpreted as a favorable sign that the aerosol industry is expanding into new fields, and that it is making its presence felt throughout the industrial world. It would of course be preferable, especially for a young industry, to have no problems at all. But after ten years of growing we think the industry is mature enough to handle just about anything that comes along, and handle it with big business finesse and with the least possible confusion.

New problems must inevitably be anticipated, especially in the food and pharmaceutical fields. Actually, so far as we are able to determine, the problems cited haven't had any serious effect on consumer sales. To the contrary, it would appear that each new technical development (despite its accompanying complications) drives up the consumer sales figures still further.

From one important standpoint, this ever increasing sales volume—as with most prolonged successes—presents a serious psychological problem for the aerosol executive. He must resist the urge to become overconfident—to think that nothing as minor as, say, one article condemning hair sprays, can have any profound effect on the whole aerosol picture. He must resist the tendency to laugh off bad news as being "unimportant" or "irrelevant" to his own success.

In recent months there have been two quietly-conducted campaigns to collect funds for a definitive study of chronic inhalation effects of hair sprays and other leading product types. The need for such studies is so obvious that we won't elaborate on it here. The astounding fact about these campaigns is that the drive to collect funds has had (according to our information) very little response.

This lapse of good sense would appear to indicate that there are responsible people in certain quarters in the industry who think that subjects like the hair spray controversy might better be brushed under the rug, (and that trade magazines might better concern themselves with "safe" technical articles and the like). As may be inferred from this magazine's recent coverage of all the problems mentioned in the first paragraph, we categorically disagree with this position.

No matter how much an industry tries to forget a black eye, one can be certain that its critics *will not* forget it. The consumer, too, has an unpredictable mind, a retentive memory, and tends to be a gossip about possible (or even rumored) dangers of products he may be using in his home. When the industry is dealt a blow in some mass communications medium, (i. e. *Consumer Reports*) the industry should both be well informed about it and should move to counteract it as soon as possible.

These research funds are urgently needed, and should be donated and put to work before any further damage is done.

IF the aerosol perfume and cologne market reaches 40 million units next year, and if the major breakthrough in pharmaceutical aerosols comes in the next 12 months (as industry authorities have been predicting), Risdon Manufacturing Co., Naugatuck, Conn. will have made a major contribution.

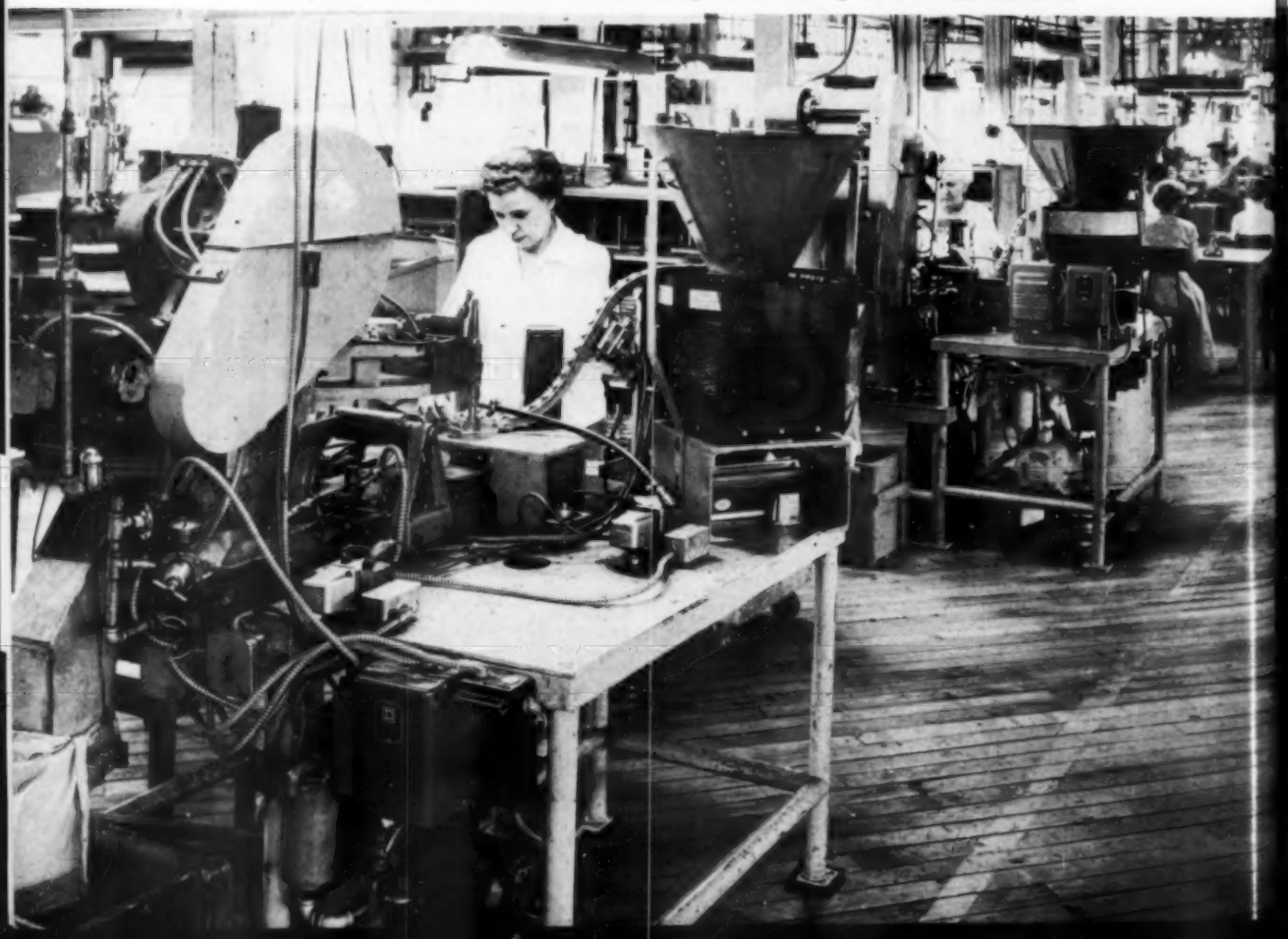
For it has been Risdon's work in developing and perfecting valves for glass bottles and its extensive work with metering valves designed especially for perfumes and colognes that have been major factors in the entry of so many leading fragrance houses into the aerosol field.

But Risdon's major advances in the perfume-cologne field (and its equally impressive developments in the pharmaceutical field) result in one disadvantage—at times they tend to obscure the company's other developments in the pressurized packaging field. In fact, the company's advertising claim that "There's a Risdon valve for virtually any pressurized product packaged in glass, metal, or plastic" can be substantiated by a quick examination of some of the company's other aerosol "successes", or by a glance at the customer shelf in the research office of Risdon's Valve Division.

For instance, it was a Risdon valve that was (and is currently being) used for "Jet Spray Bon Ami", probably the first big volume consumer household product (after insecticides). This year Risdon worked closely with S. C. Johnson & Son, Inc., in the development of its new "Pledge", a furniture and household wax that required a mechanical break-up valve. Risdon's "Micro-Mist" valve (in this case the company's standard "5210" valve topped with a "Micro-Mist" actuator), with its mechanical break up of the wax emulsion formulation into a fine atomized mist, proved to be the ideal valve for the package. So confident is Johnson of the new product, and of its market potential, that it has already sent out one and a half million samples to consumers all over the country!

RISDON is one of the few large companies in the aerosol field that entered the industry, in a manner of speaking, by invitation. Long known as a specialist in metal fabrication (it was founded in Naugatuck in 1910), Risdon had been doing extensive contract work for the Bridgeport Brass Co. prior to, and during, World War II. When Bridgeport Brass became involved with the development of the high pressure aerosol for the government—in 1944 and 1945—Risdon was asked to do the fabrication on many of the components of the valve Bridgeport Brass had developed for its own line of high-pressure insecticides. In January of 1946 Risdon began production of components for these high pressure units, and when the low pressure units

Part of the Risdon valve assembly area. Quality control stations (right background) are spotted throughout the assembly area to insure that rigid manufacturing standards are maintined.



were developed a year later, Risdon also began producing components for them. It was on the basis of this experience in producing components for other valve manufacturers, that the company undertook more than three years of laboratory experiments, development, and testing before it was ready to offer its first valve to the industry.

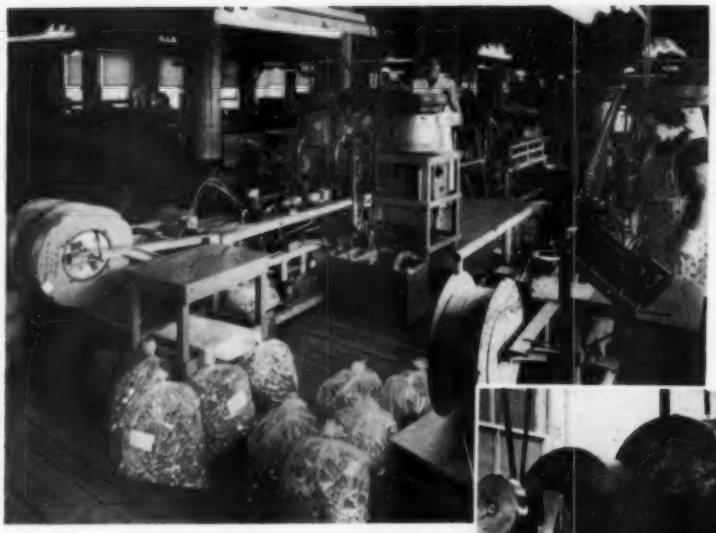
Noting the many requests by other packagers and marketers for effective aerosol valves for other applications, Risdon began development work on one of its own models early in 1949. To help in its efforts to find a good basic valve design, the company retained the services of Professor J. B. Reswick, of Massachusetts Institute of Technology, and by the end of that first year he was able to come up with an all-metal valve that was to be the Risdon standard for several years to come. In honor of its inventor, it was named the "JBR" valve.

Risdon's modern research laboratory, where new valves, improvements, and modifications are developed. Customer problems are a major part of the staff's activities.

A technician removes experimental actuators from a hand plastics molding machine.

Risdon Valve

Perfumes, Pharmaceuticals, and Other New Product Types Receive Added Attention by the Leading Manufacturer of Specialty Valves



Final step in the assembly of a Risdon valve takes place at the dip tube machines. Here the polyethylene dip tube is cut to exact size required for the container, then joined to the valve. The machine then ejects the complete assembly into a dust-free cellophane container for shipment. The valves generally are packaged 1000 to a bag. Bags of valves ready for shipment are assembled in the foreground.

Valve cups, an important component in the valve assembly are made at Risdon on these eyelet machines. The reel of plated steel is fed into the machine where it is formed by the action of 11 punches and dies, each of which successively performs a different operation. Other metal parts for aerosol packages are also made on these machines.

That same year Walter C. Beard Jr., a chemist (and now the company's research director) joined Risdon in the job of coordinating development work on valves. From that time on the company began recording a whole series of important "firsts" in the industry. A major "first" came in 1952, when a major breakthrough was recorded with the successful development of the first practical valve for a glass bottle. This was the custom made non-metallic unit that has become the familiar Risdon "GB" (for glass bottle) valve —a standard in the perfume, cologne, and pharmaceutical aerosol fields.

According to Donald S. Tuttle, Jr., sales manager of the Valve Division, this ability of the company to devise a particular valve for a special application has been the company's key to success in the aerosol industry. Working with four basic valve types (a modified version of the "JBR", the "5210" for metal containers, the "GB", and the metering valves, the company can custom make its valves for an infinite variety of product applications. Added to this tested array of basic valve types are some 30 to 40 actuators, all of which can further add to the variety of possible spray applications or product types. A new metering valve is the operating heart of Risdon's new "Mini-Mist" purse-size aerosol dispenser, which is the first complete aerosol package to be manufactured by the firm. This package is expected to spark a new perfume trend that will lead to a broadening of the entire market.

Two different tests in Risdon's quality control program are being conducted side by side, under the watchful eye of Harold Wright, quality engineer. On the left, actuators are being closely examined under the microscope to detect weldmarks, pock marks or other surface conditions that could cause faulty valve performance. On the right, size of one of the tiny orifices in the "Micro-Mist" actuator is carefully checked with a pin gauge.

RISDON'S role as a specialist in the fabrication of metal products becomes immediately evident to the visitor at the Naugatuck plant. In the main production area great batteries of multiple plunger presses, called "eyelet machines", punch out

Donald S. Tuttle, Jr., sales manager of Risdon's valve division, and Walter C. Beard, Jr., research director, review some of the hundreds of aerosol packages that use valves and actuators made by Risdon.

Toolmakers are an important cog in Risdon's research and development program. The two men in the foreground are designing tools that will be used in making experimental models of valves and actuators, developed by researchers. In the background can be seen the laboratory area.

everything from lipstick cases to covers for fountain pens. For the aerosol industry there are valve mounting cups, component parts for the company's new "Mini-Mist" perfume package, and (in an adjoining section of the plant) Plastic cores and other non-metallic valve parts are molded.

From the standpoint of aerosol marketers, however, probably the most interesting facility at the main Naugatuck plant is the development and research department, which is headed by Walter Beard. It is here that ideas for both valves and product formulations are reduced from theory to practice, that prototype product samples are formulated, that developmental design is done on new valves, and pilot production units set up for future valve lines. Mr. Beard points out: "Every development and research project is devoted to satisfying the requirements of the packaged goods marketer, the filler, the package designer, and the public. It is Risdon's view that the valve must help satisfy all four sets of requirements."

It is this development and research department that supplies customer service—where customer formulations are received, reformulated (when necessary), test packaged, and then studied under both normal and accelerated shelf test conditions. Up-to-date laboratory filling equipment for all types of containers is part of the department's facilities, and there are also flame extension test chambers and other highly specialized equipment found in few other laboratories in the industry. Chemists work side by side with engineers, toolmakers, and technicians to make possible pioneer valve developments at Risdon.

According to Mr. Beard, the broad objective of his department is to "seek out new, profitable areas of

After valves have been fully assembled, they are spot checked in a spray-testing booth. Water under pressure, to simulate the actual pressure of an aerosol product, is sprayed against a marked target to show whether the spray is too concentrated or too wide. Here the operator, using a foot pedal to operate the mechanism, is checking "Micro-Mist" actuators.

Headquarters of Risdon is this plant at Naugatuck. Two other plants are located in Danbury.

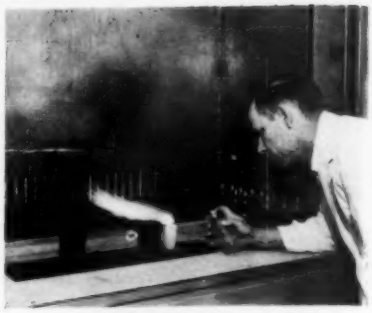
pressurized packaging development". To this end it works closely with the research directors and chemists of customer firms, and at the same time devotes a considerable effort toward researching the company's position in the valve field. One important section of the department is devoted to a complete pilot plant set-up. By switching in various production units (and often by revamping and redesigning units in the company's engineering department) the development department's personnel are able to simulate valve production conditions exactly—thus enabling them to advise the Risdon sales and production department about rate of production, probable costs, and possible manufacturing bottlenecks.

An equally important function of this department is that of keeping abreast of current packaging developments, with a view toward developing new valves for new applications. For instance, a current project is a nitrogen metering valve which will make possible dispensing products from glass, plastic, or metal containers, with either liquefied or compressed gas propellants. These valves will be capable of measuring doses ranging from several cc's down to a few microliters.

VALVE components are manufactured in the company's Naugatuck plant and are then shipped by truck to either of Risdon's two Danbury plants. The newer of these, the Beaver Brook plant, is used for all finishing operations such as buffing, polishing and lacquering. It is equipped with modern ovens, automatic polishing machines and other special decorating facilities. All metal closures and parts for the "Mini-Mist" perfume units, as well as protective domes and valve cups, are finished in this plant.

However, it is the main plant in Danbury in the center of the city, that is the hub of Risdon's network of manufacturing and assembling operations. Here, on intricate automatic and semi-automatic machines and conveyors, specifically designed to insure craftsmanlike care in a mass production system, the final valve assembly is completed.

As might be expected of a company that specializes in valves with such special performance and accuracy, quality control assumes an enormous degree of importance at Risdon.



Top: A flame extension test on an aerosol-packaged product is performed in the laboratory. Bottom: At left a quality control inspector uses a hydraulic tester to simulate pressure conditions of filling. At right a technician uses a monometer to gauge air flow through an actuator.

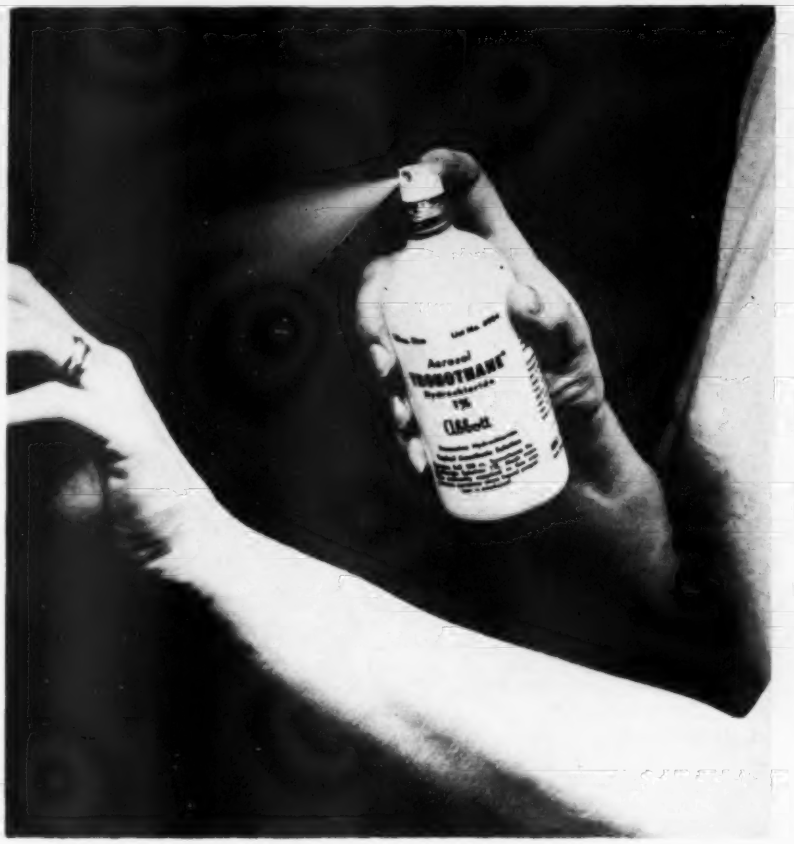
Because of the hair-thin tolerances and the minuteness of the components, even a miniscule spot of dust or a fault invisible to the naked eye becomes a "monkey wrench" in future performance of the valve. Since it is common knowledge that the valve provides the key function in the completed aerosol package, and that any difficulty will usually be blamed on the valve, Risdon takes infinite pains with each step of production to reduce any chance of the valve being the actual cause of the malfunction.

The company's stringent system of quality control begins when a shipment of component parts enters the Danbury assembly plant, and it doesn't end until the completed valves are shipped to the filler or manufacturer. Since the company's Naugatuck plant is a chief supplier (of mounting cups, plastic parts, protective valve

(*Continued on Page* 67)

Plastic components for Risdon valves and actuators are made on these molding machines at the Naugatuck plant.

Foille First Aid Spray is especially designed for sunburn relief. It is a product of Carbisulphoil Co., 2917 Swiss Ave., Dallas, Tex. Container is by American Can Co.



Aerosol Tronothane Hydrochloride, first aerosol package of Abbott Laboratories, Chicago, is a topical anesthetic for the relief of surface pain, flash burns, sunburn, and itching. It is equipped with a "Micro-Mist" valve by Risdon, and is filled by Continental Filling Corp., Danville, Ill. The plastic-coated container and clear protective cap (not shown) are made by Wheaton Plastics.

Bulls Eye Spray Shellac is a new consumer product of William Zinsser & Co., New York. It is a clear shellac in a 16-ounce container for renewing worn spots on floors, door saddles, etc.

NEW PRODUCTS AND PACKAGES

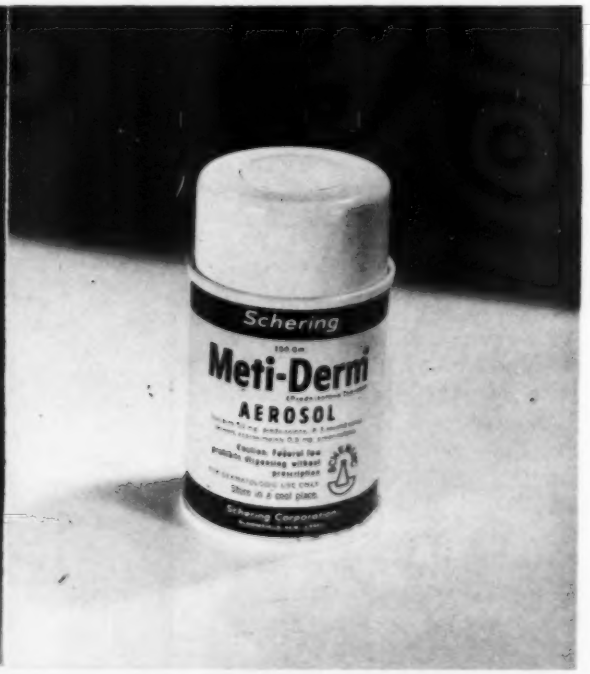
Ozicote Lens Cleaner is a new lens cleaner spray in a metered dispenser supplied by Hampton Products, Inc., Portland, Pa. Marketer of product, which will sell at $1 and provide 250 metered applications, is Woodlets Inc., Buffalo, N. Y.

HydroCORTISYL SPRAY is a new aerosol drug for the treatment of allergic, contact, and other kinds of dermatitis. Developed by Roussel of London, it employs a Risdon "Micro-Mist" valve (manufactured by Risdon English licensee, British Aerosol Corp.)

U-BET chocolate strawberry, and vanilla whipped toppings, all in eight-ounce containers by Continental Can, are reported to be among the first flavored toppings in aerosol cans. They were introduced in New York by Fox-Wiprite Corp., Brooklyn.

HIGH GLOSS and **SATIN VARNISH SPRAYS** are two new additions to the product line of Illinois Bronze Powder Co., Chicago. Both can be used for a wide variety of wood applications and both are specially formulated to resist hot liquids and alcohol.

METI-DERM, said to be the first corticosteroid packaged in an aerosol container, is a product of Schering Corp., Bloomfield, N. J., for treatment of poison ivy and poison oak, allergic dermatitis, etc. The five-ounce container sells for $2.65.



Electrolux's new aerosol line

motivation research comes up with an answer to

LABEL DESIGN for the DIRECT SELLING AEROSOL

HOW important is psychology in label design for the aerosol industry? What role does motivation research play in aerosol package design? When a major company enters the aerosol field, is it enough to have the label designed by artists who may not be sufficiently versed in the subtleties of consumer appeal?

To find answers to these and similar questions, *Aerosol Age* directed them to Richard de Bang, president of Richard de Bang Co., New York, designers of the package for the entry of the Electrolux Co. into the aerosol field.

Electrolux's addition of four aerosol products to its long-established line of home vacuum cleaners, waxers, etc. constituted a radical departure from the company's appliance line, and was the firm's initial entry into the packaging field. Noting successes of other door-to-door (or direct selling) companies with similar product types, and impressed by the tremendous growth of the whole aerosol field, Electrolux recently introduced an insect killer, a window cleaner, and two room deodorants (spice and mint)—all in pressurized containers.

According to Mr. de Bang, the problem of selling an aerosol product via the direct selling method is considerably different from the supermarket approach. Consequently, the direct selling method (used so successfully for aerosol products by Fuller Brush, Avon, and Stanley Home Products) presents a whole new set of problems for the package designer.

Motivation research studies, Mr. de Bang points out, have shown conclusively that the woman shopper becomes emotionally "toned down" when she enters the supermarket. Her blink rate is reduced, her general body metabolism slowed, and she responds perceptibly only to brilliant colors and bold shapes. In her home this very same shopper has a reverse reaction — her blink rate becomes faster and her metabolism is increased.

To counter this, package designers with the direct selling approach in mind have to tone down their packages—in color, pattern, and general design. For the Electrolux aerosol line, the de Bang Company designers stayed away from jarring color splashes and violent type contrasts. The basic colors were toned down, and at the same time the overall label pattern was kept as orderly and as pleasing to the eye as possible.

"In direct selling", Mr. de Bang points out, "the product alone must be relied upon to create a particular mood. It must be the chief tool in getting the prospective customer into a receptive (and hence a buying) mood. In the supermarket or retail drug store the lights, atmosphere, and general visual impact of the combined shelf displays all serve to create a particular atmosphere.

"A relatively minor change in color and design of an aerosol label can be of considerable help in selling the product. No matter how small this change might be, if it is done with intelligence and some basic reference to the valuable store of psychological data about the consumer that has been gathered and catalogued over the past two decades, it can sell *more* of a particular product. It should be remembered that the product has to be appealing visually to the majority of the buying public at whom it is aimed.

"For the Electrolux line of aero-

(*Continued on Page* 70)

Packaging Requirements for . . .

Pressure-Propelled

WHIPPED cream type products have been successfully marketed for a number of years in pressure containers. Their success as well as the great popularity of non-food aerosols has been due in large part to the functional service performed by the container. For many food products which may be considered for pressure packaging, it is desirable that no extensive change take place in the physical nature of the product during dispensing. The functional service of the container for these products is one of convenience of application, and ease of handling and storage.

Various aspects of the pressure packaging of food products are considered in this paper. Specifically, requirements of the container and associated accessories, propellant, and gassing procedures will be discussed. General observations on other aspects of pressure packed foods are included.

Container Requirements

Container Strength

Propellants at the present time are limited to the ordinary compressed gases, such as nitrogen, nitrous oxide, and carbon dioxide. In the pressure ranges acceptable for pressure containers, no liquefied propellant reserve is available as there is in the cases of halocarbon and hydrocarbon type propellants. Therefore, the container must be gassed to a relatively high initial pressure so that an adequate pressure reserve will be available to dispense the entire contents of a can.

These high pressures produce a more severe strain on the container. Body construction must be such that the container will withstand these pressures during extended storage without fatigue failure. Ends must withstand charging pressures without buckling.

The container must also comply with ICC regulations governing the packaging of pressurized products. Regulations may be subject to different interpretations, but it is generally accepted that a pressure not exceeding 105 p. s. i. a. (pounds per square inch absolute) at 70°F. is allowed in a container which is charged with a non-liquefied compressed gas such as nitrogen. A pressure not exceeding 115 p. s. i. a. at 70°F. is allowed in containers packed with foodstuffs and charged with a soluble or emulsified gas such as nitrous oxide or carbon dioxide. In both cases the container must be able to withstand a bursting pressure equal to twice the pressure at 70°F. or one and one half times the pressure at 130°F., whichever is greater.

Corrosion Resistance

Conditions exist in a pressure container packed with a food product which are more conducive to corrosion than exist in a conventional tin can of the same product. Headspace corrosion is one of the major problems in pressure propelled products. Headspace corrosion may be more acute in the case of pressure packed products because of the difficulty of minimizing the oxygen content of the final packaged product.

Gas Retention Requirements

For the successful marketing of pressure propelled foods, containers must be able to retain the initial gas pressure for the expected shelf storage period. Because of the lack of propellant reserve, the container must be essentially gas tight under normal conditions of storage and use.

Years of experience have demonstrated that beer and carbonated beverage containers will retain carbon dioxide at relatively high pressures over long periods of time. However, it was deemed desirable to determine experimentally how well pressure containers will retain compressed gases, nitrogen in particular, at 90 p. s. i. g. (pounds per square inch gauge) at various temperatures. Theoretically, points of possible leakage include the doubleseams of the container, the crimp of the 1" cup, and the valve.

An experiment was set up to determine the diffusion rate from the total container. In a second experiment, containers were assembled without valves so that any diffusion rates from the container might be determined independent of the valve. The experiments were thus designed in an effort to evaluate the potential sources of leakage in containers.

Experimental Procedure:

Experiment 1. Regular three-piece 202 x 406 aerosol containers with 1" cup openings were fitted with valves of four different manufacturers. Containers were weighed on an analytical balance, and gassed with nitrogen at 90 p. s. i. g. and room temperature; then reweighed and stored at 40°F., 70°F., room temperature, and 131°F.

Weighings were made at monthly intervals and average weight loss values were calculated. Values from

Food Products*

By D. W. Riester, R. C. Warner and H. T. Hoffman, Jr.
Research and Technical Department, American Can Co.
Maywood and Barrington, Illinois

7 to 10 containers were averaged for any one variable.

Weight loss data are presented in Figure 1. Weight loss values rounded to the nearest milligram are plotted against number of months in storage for each value variable at each temperature. For containers with valves B, C, and D at the three lower temperatures, there appears to have been a small apparent initial weight loss with the rate decreasing with time. However, it is doubtful that the apparent losses are of practical significance because they are in the same order of magnitude as random fluctuations in weighing, which may account to ± 3 or 4 milligrams. The average weight losses from containers with valve A were greater at all temperatures.

Greatest weight losses occurred for all variables at 131°F. Containers with valves B, C, and D, have approximately the same weight loss curve. The initial rate loss ranged from 3 to 5 mgs./month and appears to have reached a point at 5 months where weight loss is negligible. The initial rate of loss for valve A containers was 15 mg./month. Between the fourth and fifth month, the rate had dropped to 5 mg./month.

Experiment II. In this experiment valveless containers were assembled by double seaming bottom ends on both the top and bottom of aerosol can bodies. One of the ends had a hole punched in it through which a rubber plug was fitted to provide a means for gassing the container by pushing a hypodermic needle through the plug. On removal of the needle, the rubber plug reseals itself. The details of the experimental procedure were the same as experiment I except that one lot of containers was stored at 98°F. rather than room temperature. Data for this experiment are presented in Table I and the values given are the average of 10 to 14 containers. Weight losses from all variables were negligible at the end of three months storage time.

Valve Requirements

Selection of a proper valve is important. The valve and actuator design in combination with propellant will determine to a large extent whether the dispensing characteristics of a food product will be a foam, spray or solid stream.

The many kinds of available valves fall into two general groups. The first group is referred to as the foam type valve because it has usually been used for such products as whipped cream. It can also be used for solid stream delivery. Such valves have the advantage of relatively large orifices which permit less restricted flow of fairly viscous products or products

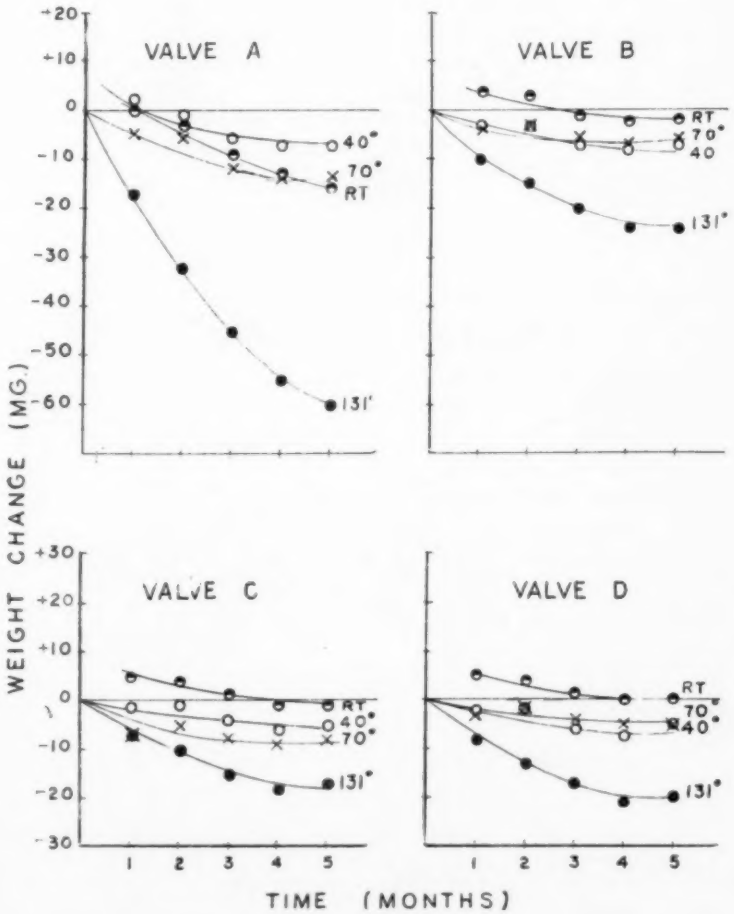


Figure 1. Nitrogen weight loss studies. Time-temperature effect on containers with 4 different valves.

* This paper was presented before the 18th annual meeting of the Institute of Food Technologists in Chicago on May 27, and appeared in the July issue of *Food Technology* magazine.

with small particles. This type valve requires that the can be inverted for dispensing and works satisfactorily with products that flow readily toward the valve. However, with more viscous materials there is danger of loss of gas since the product flows very slowly toward the valve or clings to the wall on inversion of the container. The result is high product retention.

The other group of valves have a dip tube which extends to the bottom of the container, permitting dispensing with the can in an upright position. The design of the actuator used on this valve determines to some extent whether the liquid product will be dispensed as a solid stream or spray. The smaller orifice size of this type of valve limits its use to relatively fluid products free of discrete particles larger than a few thousandths of an inch in diameter.

The actuator must be non-clogging, non-drip and must give uninterrupted delivery if a solid stream delivery is desired. For spray dispensing, the actuator must break up the liquid stream mechanically and give an acceptable spray pattern. The small actuator orifices required for spray dispensing must not clog either from drying of product or excessive particle size.

Many products have a tendency to dry and form a plug in the spout after use. This plug either remains in place during the next usage, in which case it interferes with product flow, or it is dislodged and carried along with the dispensed product, which could be objectionable to the consumer.

Many of the factors mentioned in selection of valves and valve actuators will be determined by the type of product to be packed. Other problems will be resolved only by trial and with the aid of valve manufacturers.

TABLE I

Nitrogen Weight Loss Studies
Time-Temperature Effect on Containers Without Valves

Temperature °F.	Weight Change 1 Month	2 Months	3 Months
40°	+ 3 mg.	0 mg.	+ 2 mg.
70°	+ 3	0	+ 1
98°	+ 3	+ 1	+ 1
131°	+ 1	— 4	— 4

Propellant and Gassing Requirements

Propellants for pressure packed foods have the primary function of forcing the product out of the container. They may also have a secondary purpose of causing the product to foam or to help break it up into a spray.

The selection of a suitable propellant depends primarily upon its ability to deliver a product with the desired characteristics. A product to be dispensed as a foam will require a propellant which is fairly soluble. A soluble gas will also help to some extent in forming a spray because of its tendency to escape from the product when the pressure is released. Solid stream delivery requires a propellant essentially insoluble in the product. Selection of a propellant should also take into consideration its possible effects on the flavor of the product.

The acceptable gases considered of most importance for use as propellants for foods are nitrogen, nitrous oxide, and carbon dioxide. Nitrous oxide and carbon dioxide are relatively soluble in water and more soluble in fats and oils. Because of this they have found their greatest use in products that are to be dispensed as foams or sprays. Nitrous oxide does have a slightly sweet taste which is not detectable in most food products. Carbon dioxide imparts a slightly acid taste or tang and may be objectionable in some bland products.

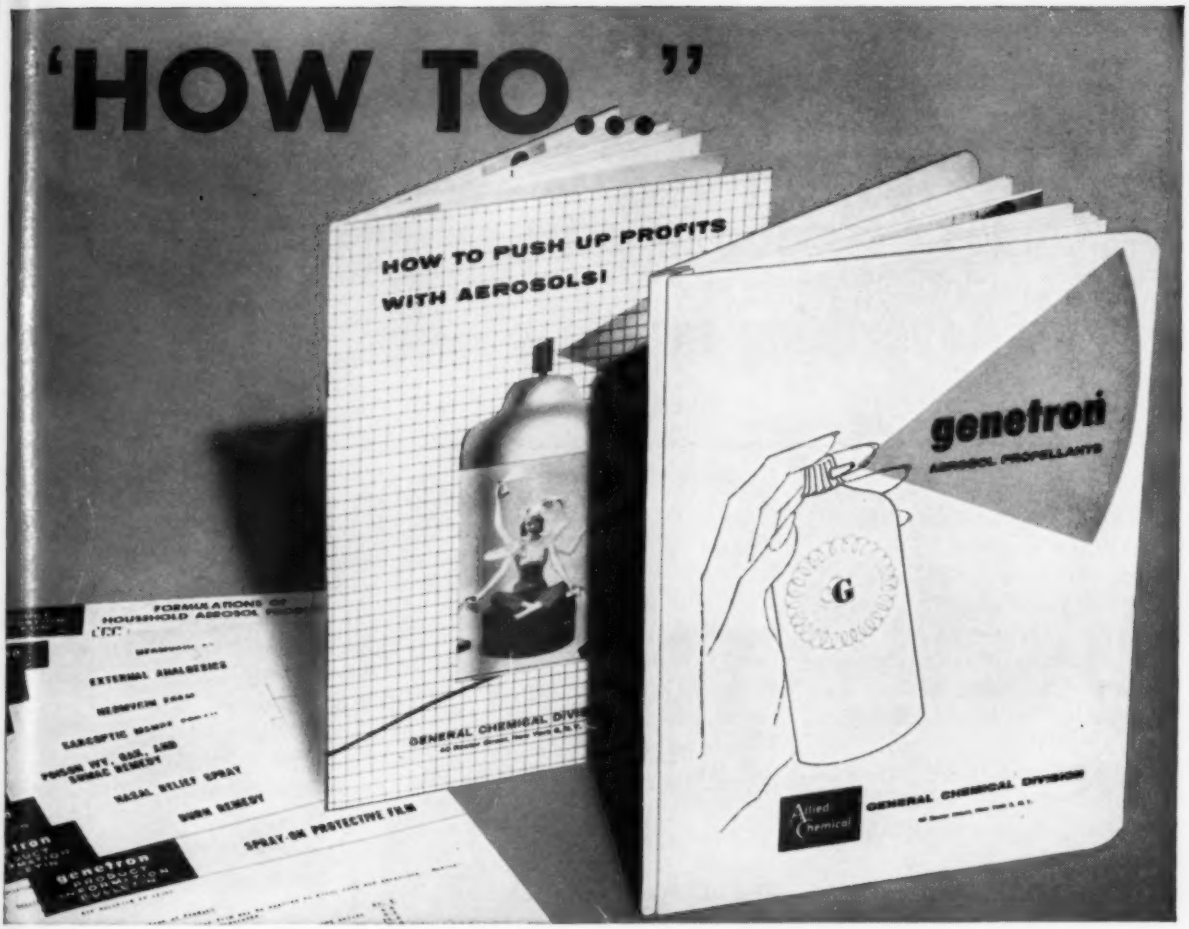
(*Continued on Page* 74)

TABLE II

Nitrogen Propellant Studies
Comparison of Gassing Procedures

Product	Gassing Temp. (°F.)	Gassing Press. psig.	Static Gassing Wt. N² (gms.)	Static Gassing Equilibrium Press. (psig.) 24 Hrs. at R.T.	Static Gassing Equilibrium Press. (psig.) 1-2 Mos. at 70°F.²	Static Gassing Residual Press. after Dispensing (psig.)	Agitated Gassing Wt. N² (gms.)	Agitated Gassing Equilibrium Press. (psig.) 24 Hrs. at R.T.	Agitated Gassing Equilibrium Press. (psig.) 1-2 Mos. at 70°F.	Agitated Gassing Residual Press. after Dispensing
Water	RT	90	1.350	86	84	26	1.417	90	88	28
Water	190	120	1.460	82	80	24	1.484	84	82	25
30° Brix Syrup	RT	90	1.343	86	83	27	1.410	89	87	28
"	190	120	1.434	83	80	24	1.471	85	82	25
60° Brix Syrup	RT	90	1.368	88	87	28	1.421	90	90	29
"	190	120	1.437	87	85	27	1.456	86	84	27
Chocolate Syrup	RT	90	1.333	88	88	28	1.356	89	88	28
"	190	120	1.464	88	88	29	1.453	85	84	27
Catsup	RT	90	1.335	87	85	33	1.382	90	88	35
"	190	120	1.431	84	80	30	1.405	84	81	30
Oil	RT	90	1.339	85	78	27	1.468	87	81	28

Notes: [1]Fill, 11 fl. oz.
[2]Cold filled products stored about two months. Hot filled products stored about one month.



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Food and Drug Commissioner Chides Cosmetic Industry on Advertising Practices

"THE American woman today wants a greater assurance of safety in her cosmetics," George P. Larrick, Commissioner of Food and Drugs told the 23rd annual convention of the Toilet Goods Association at Poland Spring, Maine on June 26. "There are increasing demands for a change in the Federal law which would require adequate testing of cosmetics before they are placed on the market. Bills were introduced before the 85th Congress to require such testing."

Praising the industry support of the present law and the work of the TGA, Mr. Larrick declared that "Despite their efforts, we have concluded reluctantly that the cosmetic industry has *not* shown that it is able to protect the public from extravagant claims by self-policing."

Mr. Larrick had strong criticism for the "opportunist" in the cosmetic industry who makes extravagant claims about a product to capitalize on new fanciful ingredients and developments. This type of marketer, he said, rakes in the profits from the product while the government agencies develop evidence to prove his claims false, or until the public loses interest.

As examples of recent "miraculous" claims for cosmetic ingredients he cited turtle oil for skin rejuvenation, chick embryo extract for regenerating new skin cells, plankton for use as a skin nutritive, pig-skin extract as a skin rejuvenator, roasted and powdered hair as a hair grower, and several others.

"Unfortunately, the originator is not the only one that gets mixed up in these wild promotional schemes. Perhaps he starts the parade, but once he begins to make headway other firms find themselves caught in a competitive situation which they evidently believe requires that *they* adopt the new ingredient and the wild claims being made for it. Continued reliance on unsupportable wild claims cannot help but work to the ultimate harm of the entire industry."

Commissioner Larrick outlined FDA-drafted legislation to strengthen Federal laws about chemical food additives, pointing out that the FDA proposes that each new additive be tested before marketing and, "on the basis of the test results, that the Government determine and publish by regulation the conditions under which it may safely be employed in food."

"...But this procedure would not necessarily afford acceptable safeguards with respect to new cosmetic ingredients. . . . Adequate control of cosmetic toxicity may require an evaluation of each separate formula before a valid safety decision can be reached. The procedure for doing this is already established in the present law, since for 20 years we have been handling new drugs on that basis. A new drug application refers to a given formulation intended for marketing and not to a single ingredient intended to be used in many different formulations."

THE cosmetic industry's incidence of advertising claims that invite criticism also come in for sharp attack by the TGA's outgoing president, Pierre Harang, of Houbigant, Inc., New York. In his presidential message, Mr. Harang declared that it is the "borderline" advertising that hurts the industry most, and urged considerably more industry vigilance to reduce such misleading advertising claims.

One sure-fire method of eliminating trouble with advertising or label claims, he suggested, is to consult the TGA. "No label or advertising copy approved by TGA has ever been made the subject of an action by either the Federal Trade Commission or the food and drug people", he declared.

False and misleading advertising

(*Continued on Page* 77)

At opening business session TGA's 23rd annual convention at Poland Spring, Maine, are left to right, Steve Mayham, executive vice-president of TGA; Pierre Harang, outgoing president of TGA; Governor Edmund Muskie, who addressed the convention; Dr. George P. Larrick, Commissioner of Foods and Drugs, and Earl W. Kintner, general counsel of Federal Trade Commission, both of whom appeared on the program.

FOOD FOR THOUGHT . . .

CANCO PRESSURE CANS FOR FOOD PRODUCTS

The potential for "push-button" foods is enormous. Explore this opportunity now—with Canco!

Few areas of product development offer as much promise as foods in convenient pressure cans. The whipped cream and topping can, pioneered by Canco, is used daily in millions of homes. Recently introduced pressurized chocolate syrup, butterscotch, marshmallow, and fudge toppings seem headed for the same success.

Yet this field is virtually untouched and the number of potential products is enormous: salad dressing, honey, syrups, meat tenderizers, cheese spreads, seasonings and sauces—to mention only a few.

Canco scientists are working diligently to meet this challenge. Drawing on the company's unsurpassed experience in food and container research, they are devising special combinations of propellants, valve and product—with exciting results!

Contact your Canco representative now to explore the possibility of packaging *your* food product in a pressure can.

AMERICAN CAN COMPANY CANCO

This is the third in a bi-monthly series on pressurized packaging in Great Britain and Eire

Aerosols in Great Britain

By A. Herzka, B.Sc., A.R.I.C.
Research Department
The Metal Box Co., Ltd.
London, W.3.

A NUMBER of new and interesting products have come on the market in Great Britain within recent months, as is only to be expected at this time of the year. Among these are "Instant One-Step", the first pressurized car polish to be marketed in Great Britain. "Instant One-Step", by S. C. Johnson & Son Ltd., is said to provide an extremely durable auto protection system with amazing ease of application. The product is nationally marketed, is packed in paper labelled 12-ounce tinplate dispensers fitted with Elgin valves and retails at 12/6.

Another new product is the first pressurized window cleaner "Windo Glo", marketed by Douglas Holt (Est. 1919) Ltd. in 12-ounce lithographed tinplate dispensers fitted with Precision break-up spray valves. "Windo Glo" retails at 3/11 per dispenser and is thus the cheapest 12-ounce pack on the British market. According to the manufacturers, "Windo Glo" is suitable not only for glass, but also for tiles, gloss paint and cars. It is claimed to be specially good on leaded lights.

At the Royal Show, Britain's premier agricultural show, held in Bristol early in July, Walter Gregory & Co. Ltd., displayed a number of interesting products, among which were the following:

"Spice Aerosol". This is sprayed into the food manger and is used to encourage livestock to consume rations to which mineral and vitamin supplements have been added.

"Q Pig Aerosol". When pigs from different litters are mixed in a common pen they are liable to fight with each other. The purpose of "Q Pig Aerosol", which contains essential oils among other ingredients, is to stop this fighting. The directions state that all the pigs should be placed in a fresh pen. The spray is then applied to the back and around the ears and if practicable the "master" pigs are to be given the blast full in the face so that part of it goes up the nostrils. It is suggested that spraying be repeated the following day, if necessary.

"Groom Aerosol". This spray is a dressing for horses, cattle, sheep and pigs being prepared for show or sale and is said to impart a fine gloss or sheen to the coat.

The three foregoing products are all packed in six-ounce tinplate dispensers fitted with Precision valves and the dispensers are paper labelled. Walter Gregory & Co. Ltd. are an old established firm marketing animal husbandry products and are the parent company of Swallowfield Aerosols Ltd., one of the major contract fillers in this country.

A number of suntan foam preparations have also been marketed for the first time, by Elizabeth Arden, Max Factor, and others.

THE British Motor Corp. is now offering pressurized paint sprays for touch-up purposes, in 29 different shades, all of which are packed in six-ounce tinplate dispensers fitted with Safca M.P.4 valves. The retail price of these packs is 10/6 ($1.47

(Continued on Page 78)

Varley Announces Availability of New Powder Formulation

AFTER two years of field testing in limited areas and two years of continued laboratory research, James Varley & Sons, Inc., St. Louis, has announced that it is offering its "Powder-Puff" aerosol formulation for packaging under private label.

The fragrantly scented product is a unique combination of talcum with hexachlorophene. The formulation is said to be truly unusual in some of its performance characteristics. There is reportedly no clogging of the vlave and at a distance of eight to ten inches from the nozzle the powder spray is said to form a perfectly smooth pattern on the sprayed surface. Containers that have been stored under normal shelf test conditions for the past two years still spray perfectly.

James Varley & Sons hold a patent on the formulation, and have announced they will not do any direct selling of the product but intend to market it through companies interested in packaging it under a private brand.

"Powder-Puff" is recommended for hospital use, particularly on aged persons to prevent bed sores, to keep skin cool and dry, to relieve heat rash, itching, etc. It also is designed as a sanitizing deodorant for application in shoes, and can be sprayed on girdles, etc., for smoother fitting. The formulation is such that the powder clings to the skin smoothly and softly, similar to the effect of pancake make-up.

Varley feels that there is a wide potential market for the product in such places as bowling alleys, golf clubs, skating rinks, or wherever else there is a demand for rented shoes. For use in the home the product's fragrant odor plus the effect of the hexachlorophene is said to make "Powder-Puff" an ideal product for use after bathing or swimming. After taking a bath, instead of using dusting powder, much of which is lost into the air during application, the powder in the aerosol container can be directed exactly where desired.

"Powder-Puff" is currently being packaged in standard six-ounce containers, but Varley reports that the formulation can just as easily be adapted to larger-sized containers.

As with most other powder formulations, the powder naturally settles to the bottom of the container. However, Varley reports that the very nature of the patented formulation prevents it from forming a hard cake — even after long periods of remaining on a store shelf or on the shelf of a home bathroom or kitchen cabinet. A ball bearing is placed in each can and after three or four shakes the user is able to get a smooth, continuous flow of powder from the valve.★

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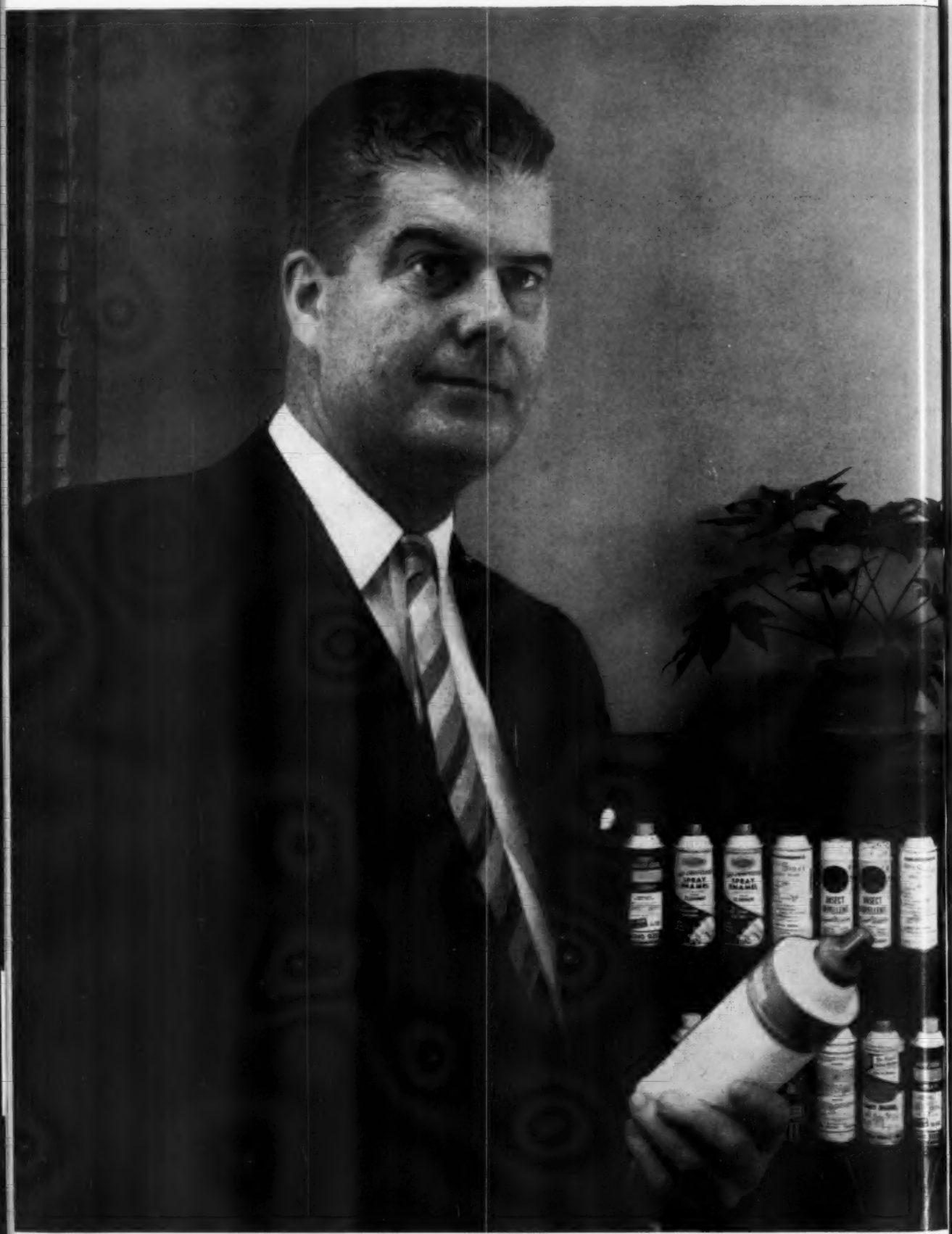
Bombrini Licenses U. S. Firm

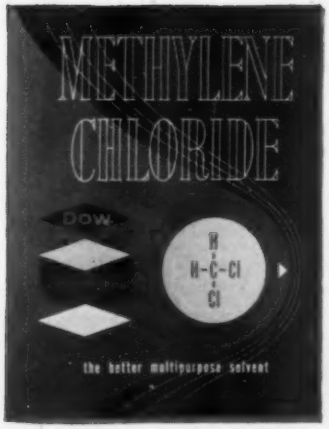
Bombrini Parodi-Delfino, Rome, Italy, a leading world producer of aluminum aerosol containers, has concluded a licensing agreement for the manufacture of its containers in the U.S. The U.S. firm is Aluminum International Inc., 1855 Blake Street, Denver 17, Colorado.



JAMES W. BAMPTON, President of Thomasson of Pa., Inc., aerosol formulating and packaging firm, tells why he uses Dow Methylene Chloride as a vapor pressure depressant in aerosols.

"Dow Methylene Chloride improves our aerosol formulations, cuts costs, too."

"We use large quantities of Dow Methylene Chloride in many of our high-quality aerosol products. And for very good reasons. First, it saves our customers money on propellant costs. Dow Methylene Chloride also blends readily with other ingredients and helps control spray characteristics. Our new plant will include a large tank farm for in-process storage of methylene chloride."



economy
As a replacement for propellant "11", Dow Methylene Chloride lowers the unit cost since savings are effected in practically every phase of product preparation.

improved solvency
The use of Dow Methylene Chloride permits excellent solubility of the active ingredients.

safety
Can greatly reduce fire hazard because Dow Methylene Chloride has no fire or flash point.

YOU, too, can benefit in many ways by using Dow Methylene Chloride as a vapor pressure depressant. Check these outstanding advantages, then write for a copy of the DOW METHYLENE CHLORIDE booklet which shows the dollar savings you can realize and other useful information. THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. SO-1153D-1.

YOU CAN DEPEND ON DOW

Pressure Packaging Overseas

Dr. Tom C. Clark, of Druk-Pak Ltd., Zurich, reports on European reaction to the hair spray controversy; and makes some estimates about European aerosol production for 1957.

THE article in the March issue of "New England Medical Journal", on the possibly injurious effects of PVP and other resins in aerosol hair sprays *(Aerosol Age* May 1958) has caused more than a ripple of interest among European aerosol experts in the cosmetic and pharmaceutical fields. Some of the more skeptical who still have reservations about the aerosol pressure package in any form and for any product — and a surprising number are still around — greet the rumours with an "I told you so" attitude. On the other hand, some of the sounder heads whose training is to analyze such problems scientifically with no thought to their commercial aspects, come up with interesting suggestions.

No European country has any government control agency comparable to the U. S. Food and Drug Administration. With politics and bureaucracy entering about every other phase of European life, and the Europeans taking it all more or less for granted, it is somewhat of a paradox to learn of their astonishment about the strict FDA regulations and the "life and death" authority it possesses, even to the smallest print in a label text. However, in Europe, practically all hospitals and clinics and all universities and medical schools are government institutions. The people who run them are government employees and in their top executive positions members of some government ministry of health, education, etc. Since all new drugs and pharmaceutical products must be clinically tested (the "must" being an unwritten standard of the profession and not a government regulation), they take the position that in the fields of health and medicine self-policing and internal professional criticism are to be preferred — to bureaucratic control by a governmental (and hence, political) agency. There is much to be said for their position.

The training and equipment with which only *one* of these experts tackles a problem such as that involved in the PVP or the fluorinated hydrocarbon inhalant problems approaches that of a *team* of U. S. experts. By training, the European is a "team" in himself. He may not get the thorough niceties of each intricate extension, but he seldom loses sight of the over-all objective or neglects to bring into focus all possible variants on the general theme. To him, a project is more than just one isolated problem.

Basically, what these researchers suggest is a systematic series of studies of workers and scientists principally exposed to the products in question, coordinated, of course, with simultaneous laboratory animal studies. Propellant losses in cold filling are well known and measurable. Fluorinated hydrocarbon atmospheric saturation, not only in the manufacturing plant, but also in the filling station, can at all times be accurately determined. The symptoms, illnesses and altered reactions of employees engaged in these industries and exposed to these conditions can be readily tabulated and analyzed.

The study of hair sprays would cover not only the workers and scientists involved in product manufacture and loading, but also the coiffure and beauty parlour experts who may be exposed practically all day long (and not just occasionally with a few short bursts morning and evening). There are plenty of fields to cover. Such a project might be just the task for an objective group headed by the public relations committee of an aerosol trade association. Such, at least, are some of the ideas of European aerosol scientists and experts.

On the whole, with the experience and records of thousands of employees extending back over a period of more than five years to draw upon, the European is inclined to discount a single experience of three doctors with two patients, particularly when all other possible causes for their findings have not been eliminated. At least in Europe to date there have been no such recorded cases, either among workers in the industry or the consumers themselves.

European Aerosol Production, '57

Europe is having one of its warmest summers in years and will probably have more flies and mosquitoes than for some time. There will be more people going on holidays, camping in tents and lying on beaches than the roads, forests and sea-side resorts have ever known before. The price of pressurized packages is down, their quality up, and their use expanding. All these signs suggest that this will be Europe's biggest aerosol year to date.

(*Continued on Page* 70)

and perfected by
Continental Can...

FOR FOOD

New Continental Development* ushers in new era of food packaging!

*In cooperation with Andersen Foods Co., division of Heublein, Inc., and Western Filling Company.

New food products get "push-button" dispensing! New Continental aerosol cans dispense either oil or water based food products in a *foam, spray, or stream pattern.*

This Continental development brings food packers to the threshold of a spectacular new market. Push-button foods from barbecue sauce to chocolate syrup are already on the market or will soon appear. Sales of aerosol foods promise to surpass the amazing success of non-food aerosols which skyrocketed to 350 million units in 1957.

Numerous new food products are now being tested at Continental's new Research and Development Center. Fillers and valve and equipment suppliers have cooperated to make this packaging break-through a commercial reality. For an appraisal of your food product's potential in an aerosol food can, call your nearest Continental representative.

CONTINENTAL CAN COMPANY

Eastern Division: 100 East 42nd Street, New York 17
Central Division: 135 South La Salle Street, Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare Street, Montreal, Que.

CHEESE SPREAD

MERINGUE TOPPING

YOUR PRODUCT?

AEROSOLS in review

Advertisers Said to be Unhappy with TV Campaigns

A NUMBER of leading aerosol marketers are far from happy with the results of their costly television advertising campaigns, reported the June issue of *Drug & Cosmetic Industry*. Acknowledging that television as a communications medium enjoys a major advantage ("Cosmetics are basically demonstrated products, and television, for the first time, gives the opportunity of taking the human living demonstrator from behind the retail counter in a department store and putting her into the public home") the article suggests that a number of industry leaders have become discouraged with the results of their 1957-58 campaigns.

As evidence of the fact that "the bloom is off the rose", the magazine quotes Raymond Spector, former president of Hazel Bishop, who said that more than $5 million was spent for advertising in 1955 and '56 — "purchases that I, as an advertising man, would not ordinarily give you $1 million for."

"In the 1955 annual report of Lehn & Fink, Edward Plaut, president, after glancing at the net profits of the cosmetic division for that year, had some very sour remarks to make concerning the company's adventures with television. Max Factor, which quite suddenly bounced its advertising agency and which has been experimenting with new ways to select an agency, ran through a series of programs last year which reports in the television press indicate were very mixed up in their results with somewhat unhappy experiences."

Also unhappy with their results are Max Factor, Coty, Rubenstein, and Shulton, all of whom complained of relatively high television advertising costs, with little appreciable sales rise.

"Breck is still in the midst of its adventure with Shirley Temple. Since Shirley Temple has decisively and emphatically refused to endorse Breck products on the program or to cooperate in any commercial way, since there is still some question as to what kind of audience these fairy tale shows are securing and particularly since there is some wonder as to the division of the popularity and public awareness between the name Shirley Temple and the name Breck, it can be said that this program is still suspended in mid air from an advertising success viewpoint."

•

A WARNING to firemen about the dangers of attempting to fight fires in stores in which aerosols are stocked is voiced in the July issue of *Fire*, the journal of the British fire services. The periodical's report concerns a fire that occurred at Kingston-on-Thames, as the result of the accidental placement of a can of non-flammable aerosol oven cleaner among some waste paper. When the paper was deposited in the incinerator, the report says:

"The can exploded while the stoker was outside the furnace room. The top of the can remained in the furnace and the rest of it was thrown from the furnace and lodged in some clothing belonging to the stoker, which was hanging 12 feet away from the furnace door.

"The heat of the can ignited the clothing, which was quickly extinguished by the stoker using a ¾-inch hose installed in the furnace room."

The article concludes with a warning that the increasing number of aerosols in retail stores bring with them a real danger of personal injury to firemen fighting fires in the stores and shops where these packages might be stocked.

•

MORRIS J. ROOT, technical director of G. Barr & Co., Chicago custom fillers, has written an excellent article on "Aerosol Emulsions" in the June issue of *American Perfumer & Aromatics*. In it he declares that "in general, all emulsification principles that hold true for conventional emulsions can be applied to aerosol emulsions," but adds that an additional qualification must be the emulsification properties of the material with the liquefied propellant, the chlorofluoromethanes and ethanes.

For foam aerosol emulsions, he reports, triethanolamine fatty acid soap is the emulsifier most commonly used because it is a "particularly good oil-in-water emulsifier for the fluorinated hydrocarbons." For the hydrocarbon propellants he advises amine fatty acid soaps, "Spans" and "Tweens", fatty acid amine sulfates, and fatty acid alkanolamides.

"Formulation, type of propellant, and propellant concentration will affect the foam quality. Stiff, dry, resilient foams are obtained with high solids formulations, a high vapor pressure propellant, and a high concentration of propellant. Conversely, soft, wet, flat forms are obtained with low solids formulations, a lower vapor pressure propellant, and a lower concentration of propellant.

". . . One very important characteristic of a foam product dispersed from a pressurized system is the percent discharge. This varies directly

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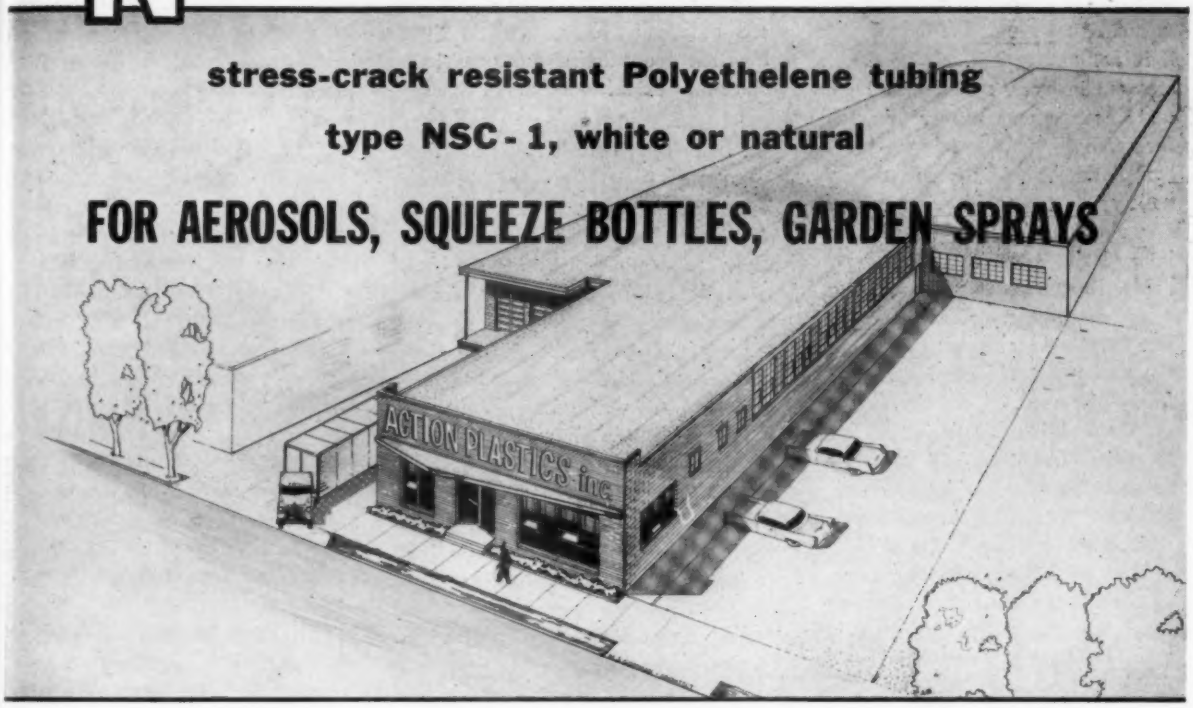

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with the percentage propellant and its vapor pressure. With a properly formulated product, values of 90% to 95% can be expected.

"Foam stability was not mentioned as one of the important factors since it is not always critical. In shaving creams, however, stability is important since the foam must remain stable for some time. In products such as hand lotions, hand cleaners and wax polishes, foam stability is not necessary since the product is used almost immediately after dispensing."

Mr. Root reports that water-in-oil emulsions "give unstable, and flat, wet foams, since the propellant is in the outer phase and therefore not finely dispersed.

"Where it is necessary or desirable to have a water-in-oil foam type aerosol emulsion with good foam stability, it can be accomplished in a circuitous manner. If the propellant is first emulsified in water, using a suitable emulsifier and then pressure filled into the water-in-oil emulsion, there results a system which can be designated as an oil-in-water/water-in-oil emulsion. The dispersed phase is droplets of water and droplets of propellant emulsified in water (oil-in-water phase). The continuous phase is the oil which now does not contain the propellant. This type of emulsion gives a rich, stable foam although there is only a small amount of water present."

The development of mechanical break-up actuators, he reports, has made possible the spraying of products which contain only small amounts of propellant. "In the oil-in-water type emulsions the purpose of the propellant is only to serve as a source of pressure. These systems are particularly convenient for those products that have active ingredients which are soluble in water. The advent of water-based aerosols makes it practical to make many products heretofore impossible.

"Emulsification of the liquefied propellants into an aqueous system has been accomplished by non-ionic, cationic, and anionic surfactants. The non-ionics have been found to be the most desirable. The ratio of surfactant to propellant can vary all the way from 5/1 to 1/4, depending on the formulation. An increase in the concentration of the surfactant sometimes causes the emulsion to become transparent. Although such emulsions are practically clear, there is little question about their being emulsions since they exhibit the Tyndall Effect."

•

THE first British aerosol fire-extinguisher (reported in our "Aerosols in Great Britain" column for June) may offer several additional hazards not present in the U. S. aerosol fire extinguishers introduced several years ago. The June issue of *Packaging News*, London trade-paper, has this to say about "Gwish":

"A minor drawback is that the valve used on the first British aerosol extinguisher is not of the one-shot type most frequently used in America, discharging the whole contents of the can when the bottom is pressed. It follows that the protective value of a partially used can is never to be relied upon. Deb Chemical Proprietaries try to deal with this weakness by a label instruction to 'order a new extinguisher when once used,' but perhaps only in methodical households is the injunction likely to be obeyed strictly and the full aerosol invariably chosen in emergency instead of the half-empty one.

"Another possible point of criticism is the toxicity of carbon tetrachloride. The manufacturers are entitled to rest their claim to use the chemical on the fact that pump-type fire extinguishers containing carbon tetrachloride have been sold for several years, with or without warning of the nature of the contents. They can also quote an official fire research publication that pays tribute to the 'relatively low record of accidents due to the use' of carbon tetrachloride at fires, and ascribes this chiefly to the warning instantaneously given by its pungent smell.

". . . Additional precautions may be advisable for a product offered to householders by the million.

"The 'Gwish' can now carries, in large lettering, a warning that the room should be well ventilated after the fire has been dealt with, and the makers are considering whether attention ought also to be drawn specifically to the toxicity risk. If the amount of carbon tetrachloride (at present two and two-fifths fluid ounces) should be increased it is likely that the warning will be reinforced with advice to keep the can out of reach of children."

•

THE June 12 issue of *Paint, Oil and Chemical Review*, is a special "Aerosol Issue" containing two important aerosol articles. The first of these is "What's Hot for Aerosols", by Al Gaines, aerosol consultant. The second is an article on the new filling line of Aeropak Inc., Chicago custom filler.

Mr. Gaines reports that there is a heightened interest among paint fillers in propane, butane, and isobutane as partial or complete substitutes for the fluorinated hydrocarbons. At least one major packager, he says, has modified many of his protective coating formulations to take advantage of the savings in propellant costs. "In this particular case the packager has partially replaced the usual propellant, which costs him 26 cents a pound, with propane at about five cents a pound. At these prices a 16-ounce container (which takes around eight ounces of propellant) would appear to offer a potential saving of almost a dime on every package. In actual practice, only five to 25% of the fluorinated hydrocarbon can be successfully replaced by the propane. This represents a saving of one to three cents

(*Continued on Page* 72)

In this column important aerosol subjects appearing in other periodicals (both domestic and foreign) will be reviewed and their conclusions summarized. It is felt that this service will enable the reader to keep abreast of most of the significant contemporary articles on the industry, even though they may appear in other periodicals. Since there is a chance that some pertinent articles may be overlooked, it will be helpful if readers will call our attention to any articles they judge important enough to review in this column.—*The Editor*

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Aerosols in Finland — II

Founding of Aerosol Assn. Points up Steady Rise of Pressurized Package in Finland

by Yrjo K. K. Talvitie
Chairman
Finnish Aerosol Association
Helsinki, Finland

THE recent announcement about the founding of the Finnish Aerosol Association highlights a fact that may be overlooked outside that country. Considering the population of Finland, the use of aerosols has reached figures which proportionally are on the same level as the foremost of the aerosol countries in Europe. The figures listed below correspond to some 200 millions when sold in retail lots.

1951	about	4,000	dispensers
1952	about	53,000	dispensers
1953	about	77,000	dispensers
1954	about	130,000	dispensers
1955	about	475,000	dispensers
1956	about	600,000	dispensers
1957	about	600,000	dispensers

As has been pointed out in a previous article ("Aerosols in Finland I", *Aerosol Age*, October, 1957) we in the Finnish industry were forced to take steps to develop our own domestic industry due to ever-increasing difficulties in the import trade, especially with foreign currency. We discovered that it was far easier to obtain currency for raw materials than for finished aerosols.

In the spring of 1954 Berner Oy and Laake Oy (now Farmos Oy) installed their first aerosol machinery. In the following year they were followed by Trans-Meri Oy, and then Kasvinsuojelu Oy and Rikkihappo-ja superfostattitehtaat Oy. According to our latest information, Fincos Oy (the Huhtamaki concern) has also installed the necessary equipment and begun production.

The principal stress has been almost wholly on insecticides. Almost without exception these have contained pyrethrins and piperonyl butoxide as the active ingredients, which have either been imported separately or as ready mixed filling solutions.

The plants in Finland that shifted over to aerosol production soon found that the relatively high research and machinery costs made it unprofitable to fill only fly sprays (which supplied work for only a few weeks yearly). Research was undertaken on a wide variety of other products, but this whole situation was somewhat complicated by the fact that there were six aerosol plants operating in a relatively small country, and their efforts were too divided.

However some progress has been made with various new aerosol product types, and during the past two years it is estimated that the following totals were produced:

	1956	1957
1. Moth killers (mainly containing DDT)	10,000	20,000
2. Mosquito aerosols (Dimethylphthalate aerosols)	—	2,000
3. Fire-extinguishers (Active ingredients— carbon tetrachloride or chlorine bromine methane)	10,000	5,000
4. Silicone Products (For impregnation of textiles etc. against water and dirt)	3,000	1,000
5. Lubricating oils Generally also containing graphite	5,000	6,000
6. Air fresheners	20,000	30,000
7. Hair lacquers	30,000	35,000
8. Hair Dyes	—	1,000
9. Shaving-cream	—	8,000
10. Antiperspirants	—	4,000
11. Eau de colognes aerosols	5,000	—

Aerosol product possibilities in Finland are by no means limited to the above examples. Several new products (i.e. sun tan lotions in pressurized form) are under active consideration and will soon be in production.

Marketers of conventional products in Finland seem to be cognizant of the fact that it takes special research and facilities to transform a conventional product to pressurized form. They seem to be taking full advantage of existing filling companies, instead of establishing new ones.

Most aerosol fillers are using pressure filling equipment (the major portion of which has been supplied by Aeratom), but Berner Oy and one or two others have refrigerating equipment supplied by J. E. Schambach, as well as glass filling equipment.

The container supply has been domestically produced right from the beginnings of the industry in our country. Tinplate dispensers are supplied almost exclusively by Oy G. W. Sohlberg, and aluminum containers by Oy Printal Ab. These companies have been able to maintain prices that are competitive enough for them to ship to other countries in Europe. Both are able to furnish containers with different protective lacquers and multicolored printing. In only a few special cases have we had to resort to foreign imports, so far mainly for glass containers. Finnish industry has not yet succeeded in making fully guaranteed, pressure-proof glass bottles.

Because the need for aerosol valves arose at a time when the currency situation was at its worst, factories for the home production of valves were somewhat hastily established on

(Continued on Page 81)

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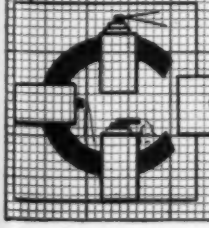


CONTINENTAL FILLING CORPORATION

Danville, Illinois

NEWS of Pressure Packaging

Colgate Wins Victory in Latest Court Battle With Carter

IN a court decision of major importance to the aerosol industry, the U.S. District Court of Baltimore on July 8 ruled that Colgate-Palmolive's two pressurized shave creams, "Palmolive Rapid Shave" and "Colgate Instant Shave", as made since May 1956, *do not* infringe the Spitzer patent under which Carter Products manufactures and sells its pressurized shave cream. Since that date Colgate has been using a newer formulation involving the use of hydrocarbon propellants (propane-butane mixtures), and its attorneys contended that this formulation change was enough to clear the company of any patent violation claim.

The court ruling had the effect of ruling that current Colgate products are free of any violation of an injunction previously obtained by Carter Products, and at the same time signaled the first clear-cut Colgate victory in more than three years' of court battles between the two major aerosol marketers.

Colgate's prior pressurized shave creams (which employed the conventional fluorinated hydrocarbons as propellants) were previously ruled by the courts to infringe the Spitzer patent, and it was to offset this that Colgate changed its propellant. However, in the court case just concluded, Carter asserted that the newer Colgate formulation infringed the patent and embodied a trade secret. In its decision of July 8, U.S. District Court Judge Roszel C. Thompson, who presided at the case, ruled in favor of Colgate on both Carter assertions.

Colgate's victory, however, did not take in all of the arguments presented by Carter attorneys. Judge Thompson ruled that Colgate must pay treble damages and attorney's fees for marketing 1.6 million cans of its older formulation in violation of the previous injunction granted Carter.

The long and costly court battles between the two companies may not yet be over. Carter issued word that its attorneys were "studying the opinion to determine what steps will be taken by appeal or otherwise", with respect to the court's findings. To this Colgate issued "no comment".

The decision is being closely studied by other aerosol shave cream marketers, most of whom have been paying patent royalties to Carter on the Spitzer patent. *Aerosol Age* learned last month that at least two other major marketers of shave cream are contemplating installation of filling equipment for propane-butane filling.

•

Jordan Appointed by Crown

Jack P. Jordan has been named consolidated district sales manager, New York area, of the Crown Cork and Seal Co., Philadelphia. A graduate of the University of Illinois, he has been continuously affiliated with Crown for 18 years, excluding 1943-1945 when he served as Lieutenant, U.S.N.R., Air Combat Intelligence. He was most recently New York assistant district sales manager and regional administrator. In his new capacity, Mr. Jordan will be responsible for the sale of Crown's entire line of cans, crowns, machinery, and closures.

•

Western Packaging Show Set

More than 10,000 scientific, technical, production and management executives from the packaging industry will gather in San Francisco's Civic Auditorium Aug. 11-13 for the Western Packaging and Materials Handling Exposition. About 150 packaging firms are expected to be represented, making the 1958 exposition the largest packaging show ever to be held on the West Coast.

On August 12 a problem clinic will be held to probe some of the most vexing problems faced by packaging executives.

Hours of the exposition are: Monday, August 11, 1:00 p.m. to 5:30 p.m., Tuesday, August 12, 1:00 p.m. to 9:30 p.m., Wednesday, August 13, 1:00 p.m. to 5:30 p.m. The clinic is scheduled for Tuesday, August 12, 10:00 a.m. to 12:00 noon.

Among the aerosol suppliers with displays will be American Can, Continental Can, and others.

•

CCSM to Meet in Montreal

The historic city of Montreal, Que. will be the site of the first convention of the Canadian Chemical Specialties Manufacturers, Canadian counterpart of the CSMA. Over 250 delegates are expected to be present for the two-day meeting, scheduled for Nov. 13-14 at the new Queen Elizabeth Hotel.

Program preparation is under way and a full program is expected to be available for publication about Sept. 15. The association includes Aerosol, Insecticides, and other divisions similar to those of the CSMA. Recent tariff changes and the future economic policy as it applies to the Canadian chemical industry will be discussed. Ladies attending the convention will be provided with a complete tour of the city of Montreal and surrounding historical sights.

The association advises that those wishing to attend should write to the secretary manager of the CCSM, Michel Chevalier at 1005 Sherbrooke Street West, Montreal. Hotel reservations can be made directly with the hotel, but it is requested that CSMA members planning to attend advise Mr. Chevalier of their intention to register so that their requests will be met without duplication.

Toothpaste Ads Attacked

Advertising statements by the major toothpaste marketers in the country last month came under sharp attack by the American Dental Association as the House Government Operations subcommittee began hearings on assertedly false and misleading advertising of toothpaste and other dentifrices.

The parade of ADA witnesses was headed by Dr. Harry Lyons, dean of the School of Dentistry of the Medical College of Virginia and a former president of the American Dental Association, who charged that toothpaste ads tend to create a "false sense of security" about tooth decay, gum disease, bad breath, and serious systemic diseases. He particularly attacked advertising that implies that candy and other sweets can be freely eaten throughout the day providing a particular toothpaste has been used before breakfast. He termed this a "vicious suggestion" and declared that it "flies in the face of all that has been done by the health professions to educate the public about hygienic and dietary measures to protect the teeth against decay."

Dr. Ralph E. Creign, a member of the association's legislative council, urged that the existing laws be strengthened to give the FTC more authority to move against exaggerated or otherwise misleading advertising claims. "The current concept that such claims be considered true and unchallengeable until disproved by the public is fallacious and demonstrably ineffective", he declared.

One of the first of the major marketers to reply to the accusations was Colgate-Palmolive. A spokesman for the company said that its advertising, "while functioning in an area of competition in keeping with the traditional American concept which has produced the highest standard of living in the world, is consistent with the goals and objectives of professional societies and government agencies. Its advertising claims are supported by its research."

The hearings, held before the House Legal and Monetary Affairs Subcommittee were presided over by Rep. John A. Blatnik (D., Minn.).

•

Hirschberg to New C-P Post

Colgate-Palmolive Co., New York, has announced the appointment of Joseph J. Hirschberg to the newly-created position of merchandising manager of the Toilet Articles Division. He will be responsible for the general supervision and coordination of all merchandising within the product management and home office sales groups of the division.

Mr. Hirschberg joined Colgate-Palmolive as a salesman in the Cincinnati District in 1947 and became sales supervisor in 1953. In 1954 he was transferred to the New York District as supervisor and later that year was appointed assistant product manager on "Colgate Dental Cream" in the company's home office.

Canco Shifts Executives

Martin

Leghorn

American Can Co., New York, has appointed new presidents for two of its wholly-owned subsidiaries, Sun Tube Corp. and Bradley Container Corp. New president of Bradley, maker of plastic tubes, bottles and cans with headquarters in Maynard, Mass., is Kenneth M. Leghorn, president of Sun Tube since 1953. New president of Sun Tube, succeeding Mr. Leghorn, is Joseph D. Martin, who has been the subsidiary's executive vice president since 1955.

Mr. Leghorn succeeds Leonard A. Britzke, who has returned to the parent company as general manager of manufacture, Canco division. A graduate of the Massachusetts Institute of Technology, Mr. Leghorn joined Sun in 1947 as an administrative assistant.

Mr. Martin has been associated with Sun Tube since 1927 and has served as plant manager, production manager, vice-president and, most recently, as executive vice-president. His company is a leading producer of collapsible metal tubes, aerosol valves and impact extrusions and operates plants in Hillside and Washington, N. J.

•

Maria Wiener Leaves Fluid

Maria Wiener, technical director of Fluid Chemical Co., Newark, N. J., has been forced to leave her post because of a family move to Ohio, her husband having been transferred to Akron by the firm for which he works. Mrs. Wiener has not yet indicated what her future plans may be.

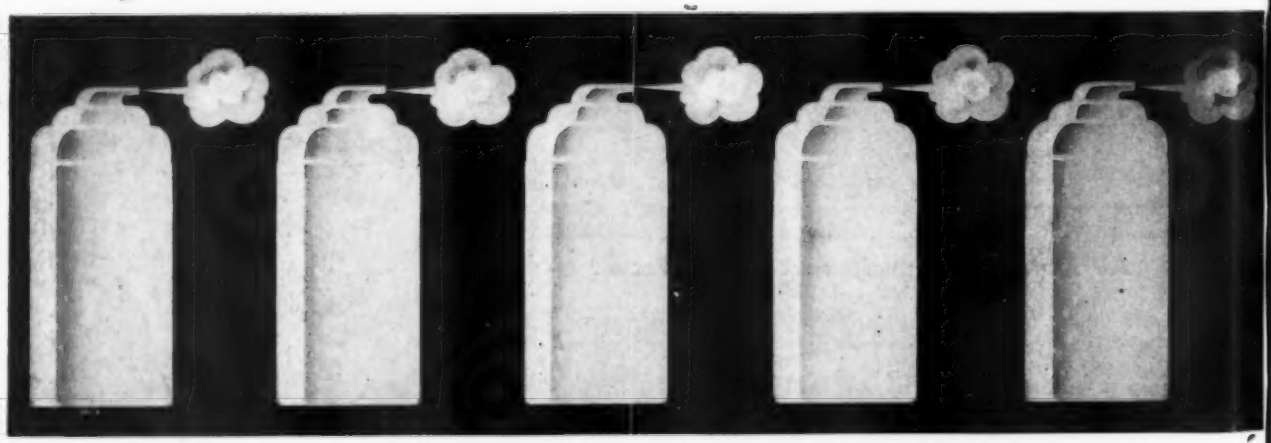
Her work at Fluid has been taken over by Anthony Iannacone, previously a technical service representative on detergents and detergent formulations with General Chemical Co. Prior to that he was supervisor of the detergent laboratory and production supervisor for Lever Brothers.

Air Reduction Unveils Pressurized Food Lab

Air Reduction has announced that the facilities of its customers' service laboratory are available to all users and prospective users of food and non-food pressurized packaging. The services include the selection of custom blending for the compressed gas propellents (nitrous oxide, carbon dioxide, nitrogen and argon) as well as shelf life studies, product adaptations, and bacteriological studies. The laboratory is under the supervision of R. C. Webster, laboratory manager, and his assistant, Patricia Lychalk, both food technologists. More information, can be obtained by writing to Customer Service Laboratory, Ohio Chemical & Surgical Equipment Co., 1400 East Washington Ave., Madison 10, Wisconsin.

FELTON *for* AEROSOL PERFUMES

to bring exciting new merchandising possibilities and sales success to your aerosol packaged products



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ATI Names Research Chemist

Miss Vera H. Kepler has joined Aerosol Techniques, Inc., Bridgeport as a research chemist. In her new post Miss Kepler, a graduate chemical engineer of the Institute of Technology in Berlin, Germany, will assist in the setting up of ATI's stability program and carrying through regular testing and studies of production and new products.

She was formerly with Charles of the Ritz, for whom she set up an entire line of cosmetics in Argentina.

•

Colgate Appoints Byrne

Colgate-Palmolive Co., New York, has announced the appointment of Paul Byrne to the position of product manager in charge of its "Palmolive" men's line and the "Cashmere Bouquet" line of toiletries.

Mr. Byrne joined Colgate-Palmolive in 1955 as assistant merchandising manager. He was formerly assistant to the president of Prince Matchabelli, a subsidiary of Vick Chemical Co., and prior to that was with Lever Brothers.

He succeeds Richard M. Colgate who, after a six-month leave of absence (during which time Mr. Byrne served as acting product manager), has resigned to devote full time to the affairs of his late father's estate.

•

Nestle Buys Drug Firm

Nestle-LeMur Co., New York, a leading aerosol marketer, has announced the acquisition of E. S. Miller Laboratories of Los Angeles through a stock transaction by which Nestle gained all the capital stock of the pharmaceutical firm. Nestle-LeMur will consolidate the warehousing operations of its own line, and of its subsidiaries, Smith and Harriet Hubbard Ayer, in the Miller plant.

•

Chemway Names Janes VP

E. Roth Janes, former vice-president of Warner-Chilcott Laboratories, has been elected vice-president for manufacturing of Chemway Corp., Mountain View, N. J. He will be responsible for all manufacturing operations at the head office and will also act as manufacturing advisor to the Lady Esther Division and other Chemway units at Mountain View and Overseas.

•

Carbide Appoints C. F. Gray

Charles Franklin Gray has been appointed "UCON" propellant technical representative by Union Carbide Chemicals Co., Division of Union Carbide Corp., it was announced in New York early last month. He will work out of the company's Chicago offices.

Mr. Gray will serve users of the "UCON" propellants that Carbide will be producing this fall at Institute, W. Va. Design capacity of the new unit is 50 million pounds of UCON fluorocarbons per year.

Awarded a chemical engineering degree from Purdue University in 1952, Mr. Gray joined Union Carbide six years ago. Prior to his new appointment, he was based at Grand Rapids, Mich., as technical representative, chemicals sales and service, Western Michigan territory.

•

Fritzsche Elects Officers

Fritzsche Brothers Inc., New York perfume and essential oils supplier, last month announced the election of Ellis F. Merkl as secretary-treasurer and E. C. D'Andrea as assistant treasurer. At the annual stockholders meeting John L. Cassullo was re-elected president; Frederick H. Leonhardt, Jr., Ernest Guenther, and Edward E. Langenau, vice-presidents; and A. J. Hemminger, assistant secretary.

Messrs. Cassullo, Leonhardt, Guenther, Mathers, and Merkl were all elected directors by the stockholders.

•

Schwartz Joins Shulton

Morton Schwarcz, former technical director of Motomco, Inc., has joined Shulton, Inc., Clifton, N. J., as manager of its applications laboratory. He will be responsible for the development of household chemical formulations and creation of end uses for new industrial chemicals.

•

Aerocide Names Ad Agent

Aerocide Dispensers Ltd., Toronto, Custom filler, has announced the appointment of Gent Advertising Ltd., also in Toronto, as its advertising agency.

G. Barr Expands Research

Expansion of its research and development laboratory facilities has been announced by G. Barr & Co., Chicago custom filler. The company's laboratory space was increased 25% to a present total of 3000 square feet, and the technical staff increased from 14 to a total of 19 chemists.

George Barr, company president, reported that the stepped-up research and development section will be devoted principally to nitrogen-propelled products, "the segment of aerosol technology to which we attribute the greatest potential for elaboration and growth."

He reported that the present average weekly production rate of the company's New York and Chicago plants is one million pressure package units, representing a ten-fold increase over the company's weekly output during 1950.

The company launched its aerosol activity in 1949 with a 60-square foot laboratory and one aerosol chemist. Barr is presently filling 25 categories of products, as compared to 15 in 1954 and five in 1950. Mr. Barr said his company has always operated on the premise that technical facilities must be "ahead of, not just in step with," current production requirements.

•

VAH Names Ralph Barley

van Ameringen-Haebler, Inc., New York manufacturer of perfume and flavor materials, recently announced that Ralph C. Barley had joined the firm as manager of the company's engineering department.

Formerly senior process project engineer at American Cyanamid Co. in Bound Brook, N. J., he previously was associated with the Foster Wheeler Co. and the General Aniline and Film Corp. in similar capacities.

•

A. G. Jacks Dies

Arthur G. Jacks, vice-president and treasurer of Adolph Gottscho Corp., Hillside, N. J. manufacturer of coders and imprinting machinery, died early last month at the age of 39. He was a graduate of St. Peter's College and of John Marshall Law School.

Vision based on Experience

IN AEROSOL VALVES—The original inspiration of pressurized packages opened whole new eras of packaging. But, just as with the original inspiration of the wheel, later refinements have contributed advances never thought possible. Here at Sun Tube, we have created *new methods of manufacture and quality control that bring the cost of aerosol valves down* — their efficiency up — and that greatly increase their applications. Vision based on experience. Investigate.

IN COLLAPSIBLE TUBES—The inspiration behind the first collapsible tube for artist's colors opened the door to many new refinements and applications for tubes. Such advances as Sun Tube's shoulder coating — the UNITAINER, the first individual-use tube — and, of course, more efficient manufacturing methods. Each advance in turn has made possible the visions of today. Even to the newest — *feeding man in outer space from collapsible tubes*. Vision based on experience, to bring industry new methods for new requirements in packaging with collapsible tubes. Investigate.

Sun Tube

CORPORATION

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Common Label Terms Defined in USDA Policy Statement

Bacteriologists at the Agricultural Research Service of the USDA last month drew a sharp distinction between chemicals that claim to be sterilizers, germicides, disinfectants or fungicides, and those that are sold as fungistats, bacteriostats, or sanitizers. In a policy statement issued to clarify labeling procedures of some commonly used terms in the packaging of aerosol pharmaceuticals, the scientists declared that label statements must be both factual and clear.

Sterilizers, they point out, must kill *all* bacteria when used as directed. Germicides and disinfectants must kill *all* bacteria *except* resistant spore-forming species. Fungicides must kill *fungi*.

Bacteriostats must prevent the growth of bacteria. Fungistats must stop development of fungi. Sanitizers must reduce bacterial counts to *safe* levels, as may be judged by public health requirements. An antiseptic may be either a germicide or a bacteriostat, depending on its use, but the word is usually used for preparations applied to living rather than inanimate things.

Chemicals specifically registered for use in hospitals must meet special standards of germicidal activity. Of the 7000-odd bacteria-fighting materials permitted to move in interstate commerce today, only about 450 have been accepted for hospital use."

Basically, no product can bear a label recommending it for use in hospitals unless it is effective against both pyogenic (pus-forming) and enteric (intestinal) bacteria. Also USDA bacteriologists hold that no sanitizing result short of complete disinfection can be of much practical use in hospitals.

Self-regulation within the chemical industry itself is a great help, USDA officials point out, in protecting the public against over-enthusiastic claims for germ-fighting products.

Coined names for "miracle ingredients" in sanitizers may raise questions when manufacturers apply for registration and USDA acceptance of the labels on their products. While such names may be used extensively in advertising, the product labels must carry the well-known common name or the correct chemical name of each active ingredient — the actual germicidal or sanitizing agents — in a form specified by law.

National advertising of registered chemicals is regulated by the Federal Trade Commission, which works closely with USDA to keep exaggerated claims out of print. However, USDA regulatory workers check for accuracy all collateral labeling — publicity which accompanies the product — such as display placecards and handouts that appear in retail stores, and leaflets that go with the package.★

•

C-P Names J. H. Brant

The appointment of Dr. Joseph H. Brant as director of corporate research was announced recently by the Colgate-Palmolive Co., New York. He will be in charge of all corporate research department activities at Jersey City, Rutgers University and the University of Rome.

Dr. Brant was director of research of the Toni Co. from 1950 to 1957, and more recently was coordinator of research at the Harris Research Laboratories. Prior to that, he was director of research for the Bates Manufacturing Co. During the war, Dr. Brant was in charge of planning and organizing the research efforts of the newly-founded Institute of Textile Technology, working very closely with the Office of the Quartermaster General.

A graduate of Ohio Wesleyan University in 1930, Dr. Brant was awarded his Ph.D. by Cornell University in 1935.

•

Acrolite Expands Line

Acrolite Products Inc., West Orange, N. J., last month announced the addition of four new products to its line of aerosol specialties for use in printing plants. The first of these is "Gear-Lube", a heavy duty grease for open gears, chains, etc., on presses and other equipment. The second is a metal repellent spray for linotype, monotype, and Ludlow molds.

The two others are both cleaners, one a special glass cleaner for vacuum frames, viewing tables, and other graphic art equipment; and the other a film and plate cleaner. All are in 16-ounce containers.

•

Form Ecuador Pyrethrum Co.

A new company, called INEXA, Industria Extractora CA, has been established in Ecuador to establish and operate a plant near Quito, Ecuador, for the extraction of pyrethrum flowers. Orders for equipment have been placed and it is expected that the new plant will begin operations in October or November of this year. The company is headed by Dr. Luis Werner Levy.

Ecuadorean production of pyrethrum, although still at a relatively low level, is reported to be well established, and the new plant is expected to help insure the ability of Ecuador to maintain a competitive position.

The new plant will use a unique extraction method developed by Dr. Levy and presently under option to the Mitchell Cotts Group for use in East Africa. The patented process is reported to substantially increase the economic advantages gained by extracting pyrethrum at the point of production.

•

George Tomback Dies

George Tomback, president of Renaud Co., New York perfume and essential oils supplier, died suddenly late in June. He had been in the essential oil and aromatic industry for 21 years, and became president of Renaud in 1953.

Mr. Tomback was a member of the American Society of Perfumers, and before coming to Renaud was with the Aromatics Division of E. I. du Pont de Nemours & Co.

•

DDT Export Price Rises

Prices of technical grade DDT for export have been increased one cent per pound, it was announced early last month by the chemicals International Division of Olin Mathieson Chemical Corp., New York. The increase, applicable to the powder and flake or coarse grind material, was effective July 1. The new price for the powder is 23 cents per pound.

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Aerosol Book Nearly Ready

A comprehensive book devoted exclusively to aerosol packaging will be published in England in September. Entitled "Pressurized Packaging (Aerosols)", the book is reported to be aimed at bringing together the many scientific and trade journal contributions in one comprehensive volume. It will be published by Butterworth's Scientific Publications, 4/5 Bell Yard, Temple Bar, London W.C. 2, England.

Authors of the book are A. Herzka, of the Metal Box Co., Ltd. a contributor to *Aerosol Age* and a well-known European authority on aerosols, and Jack Pickthall, of Polak & Schwarz (England) Ltd. a contributor to *American Perfumer* and to the British periodical *Soap, Perfumery & Cosmetics.*

The book will contain chapters dealing with propellants, containers, valves, filling methods, laboratory procedures, emulsification systems, and perfume. There is also a section containing more than 200 formulations covering such widely different product types as foods, insecticides, cosmetics, paints, and numerous other products.

•

Curtis Appoints J. R. Torrens

John R. Torrens, former manager of the Latin American Division of Bristol-Myers International, has been elected a vice-president and general manager of Helene Curtis Internacionel, S.A., a wholly-owned subsidiary of Helene Curtis Industries, Chicago.

A Correction

On page 37 of the July issue of *Aerosol Age* there appears a story describing the election of Arthur E. Johnston, "vice-president of Colgate-Palmolive Co." as new president of the Toilet Goods Association. Mr. Johnston is actually assistant secretary of that company.

Accident Spurs Move to Brand Suntans "Inflammable"

AN ACCIDENT, involving a leading suntan lotion, that caused the serious burning of a woman, has set off a move in Cleveland to label certain toiletries "flammable". The action was indicated by the Cleveland Fire Prevention Bureau after a 28-year old Cleveland woman, Mrs. Leona Johnson, was severely burned as a result of holding a match near some "Bronztan" lotion.

The Cleveland Fire Prevention Bureau warned city merchants to label three suntan lotions as "inflammable" or remove them from their shelves, and Capt. Herman Behnke, head of the bureau warned that his organization would seek a ruling on several other toiletries with an alcohol base (such as after shave lotion and hair tonics). Cleveland has a city ordinance that any drug or toiletry with a flash point below 200 is inflammable and should be so marked. It is reported that "Bronztan" has a flash point of 65 and is "highly flammable".

Shulton reacted immediately by sending small labels (cautioning that the lotion is inflammable if held near a flame) to all its dealers in Ohio. George L. Shultz, Shulton president, declared that it was his understanding that the accident resulted from the user lighting a match near her clothes, which had become saturated with "Bronztan". He pointed out that the lotion was apparently not being used in its proper role as a skin applicant, and emphasized that many other drug store items contain the same alcoholic content.

•

Grimm to Sterling Post

John Edward Grimm III has been named vice-president of Sterling Drug Inc., New York. He had been recently appointed director of sales of the company's National Brands Division, which manufactures and distributes the company's line of household articles and proprietary drugs.

Before joining Sterling last year he was vice-president in charge of marketing of J. B. Williams & Co., a leading aerosol shave cream marketer.

New St. John's U. Lab

A $4,500,000 Science - Pharmacy Hall will open this fall on St. John's University's new Long Island Division campus in Jamaica, N. Y. The building, said to be one of the largest and most modern of its kind in the East, will provide classroom and laboratory facilities for undergraduate and graduate students in biology, chemistry, and physics. It will also become the new home of the University's College of Pharmacy, now located in Brooklyn.

Included on the pharmacy floor of the new building will be a completely equipped aerosol research laboratory, which will provide facilities for a study in aerosols under the direction of Dr. John J. Sciarra, associate professor of chemistry at the College of Pharmacy. The results of this study will be presented to the aerosol industry. The aerosol laboratory will be large enough to permit the addition of new equipment as it is developed, and will enable the College of Pharmacy to offer both undergraduate and graduate courses in aerosols.

•

Carbide Reassigns Four

The Union Carbide Chemicals Co., division of Union Carbide Corp., New York, has announced the transfer of four technical representatives. Loray A. Crisorio and Bernard W. Hurley were transfered to the Chicago district, D. Wallace Enright to the Charlotte District, and H. Robert Hubbs to Indianapolis District.

•

Hazelton Awarded Contract

Hazelton Laboratories, Falls Church, Va. has been awarded a research contract of $144,000 from the National Cancer Institute to investigate the toxicity and pharmacological activity of various chemicals under consideration for use in cancer chemotherapy.

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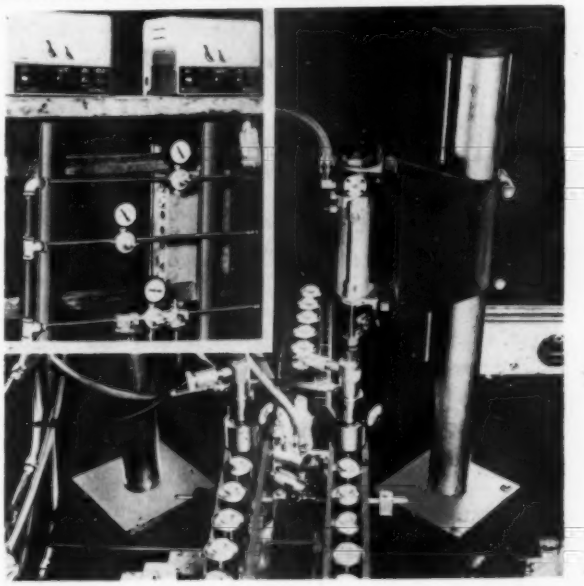
Equipment— Processes— Bulletins—

New Aerosol Pressure Tester and Venter Unveiled



A new apparatus for testing pressure and venting gas in pressurized valved containers has been developed by The Robins Engineering Co., North Haven, Conn. The unit is said to be the only known method to vent gas without discharging any of the product. It fills the dip tube to the desired level, tests the pressure of containers traveling on the assembly line, and rejects containers which are not pressurized within the acceptable limit, all automatically.

Installation of the unit, called the "Robins Aerosol Pressure Tester and Venter, can be made on any double or single aerosol line. The only power requirements are a 110V electrical outlet and an air supply.

The containers coming down the line automatically position themselves under the testing head. Where necessary, the unit can reject up to 60 containers per minute in one continuous operation. Robins reports that in one food packaging plant where it is currently being used, the installation of two pressure testers has replaced eight women spot checkers and provides 100 per cent checking and quality control.

It comes in two models, the "CA-1" for valves with dip tubes, and the "CA-8," for aerosols with upside-down valves, where no venting or gas discharge can be tolerated. Further information can be obtained by writing the company at 208 Maple Ave., North Haven.

Gas Chromatography Booklet

A new, descriptive 24-page notebook on gas chromatography, complete with photographs, graphs, and traces is available free of charge from Wilkens Instrument & Research, Inc., Walnut Creek, Calif. It lists specifications and prices for the three "Aerograph" models with columns, column packings, micro syringes, recorders, and other valuable GLPC accessories.

Other pages demonstrate techniques on fatty acids and terpene analysis, showing "Aerograph" traces on some of the more difficult separations. Those who send for the "Aerograph Notebook", are put on the mailing list to receive "Aerograph Research Notes", published periodically, which provides current information on chromatography developments. It is conveniently punched to fit in the "Aerograph Notebook."

•

Automatic Valve Inserter

A new fully automatic machine for feeding, orientation, and inserting aerosol valves into cans has been announced by Pneuma-Serve Ltd., Toronto, specialist in design, development, and manufacture of special purpose machinery. The self-contained unit consists of a large feeder, a system of delivery tracks, and an inserting device.

It can be used in conjunction with a variety of can sizes and is capable of handling valves with dip tubes up to seven inches long. The change-over from one size can to another can be made in a matter of a few minutes.

The feeding and inserting rate varies between 80 per minute for valves with short dip tubes and 55 per minute for valves with the longest dip tubes. The first machine was recently installed by a leading Canadian custom filler, and Pneuma-Serve has announced that it is now ready to accept further order. Inquiries may be directed to the company at 42 Queen Elizabeth Blvd., Toronto 14.

•

Accident Prevention Booklet

The National Safety Council, 425 N. Michigan Ave., Chicago 11, has just released the second edition of its "Handbook of Accident Prevention". The Council reports that it was written for the small business lacking full-time safety specialists, and it's style is also aimed at key employees in small organizations. Further information and quantity price quotations may be obtained by writing directly to the Council.

•

New Lab Instrument Folder

A wide variety of new instruments and apparatus for laboratories is illustrated and described in the new catalogue of the Will Corp., Rochester, N. Y. Among the new instruments are a low-priced chromatography cabinet, two mechanically refrigerated water baths, and some 1000°F. convection ovens, a new flash point tester, and other units. Copies of the catalogue are available by writing directly to the company at Rochester 3, N. Y.

•

Methylene Chloride Booklet

"Methylene Chloride in Cosmetic Aerosols", a new 14-page booklet describing a number of new uses for the propellant substitute in cosmetic products, has been issued by the Solvay Process Division of Allied Chemical Corp., 61 Broadway, New York 6.

The booklet contains pertinent information from a number of recent studies to determine the possible irritability to skin and hair of methylene chloride, as well as in-

formation about possible valve or container corrosion. In both cases it was found that methylene chloride could be successfully used in hair sprays and other cosmetic-type products.

Also included are sample formulations for a wide range of non-cosmetic type products, together with reprints of articles about methylene chloride which have appeared in *Aerosol Age* and other trade publications.

Chemical Corps Develops New Particle Counter

A DEVICE which collects and identifies airborne pathogens and automatically separates them into size categories, completely covering the microscopic range, has been invented by a civilian scientist of the U. S. Army Chemical Corps.

Known as the "Andersen Sampler", the device takes its name from the inventor, Dr. Ariel A. Andersen of the U. S. Army Chemical Corps Proving Ground at Dugway, Utah. It has already proved useful in air pollution studies in public health and industrial hygiene. It is extremely sensitive and Dr. Andersen sees usefulness for it in the detection of disease-producing organisms in the air of hospitals, schools, and other public places.

Up to the present time, the all-glass impinger has been the most widely used aerosol sampling device developed for bacteriological work. It is known that the capacity of a pathogenic cloud to produce infection in exposed animals depends upon the size and number of viable particles per unit volume in air. The all-glass impinger counts only the cells making up the particles and both size and count of particles are lost.

The Andersen Sampler not only determines the number of viable particles in an aerosol, but accurately separates the particles into their various size ranges as well. This makes it possible to correlate the number and size of viable particles in a pathogenic aerosol and the amount of animal infection produced.

With the Andersen device there is no loss in viability of particles from the aerosol sample collected because the particles are impinged directly upon the culture medium, where they start to grow at once. None of the particles are lost on the inner surfaces of the sampler or on the walls of the Petri dishes rather than on the culture medium. In the glass impinger there is a considerable loss of viable particles.

The sensitivity of the Andersen Sampler has been demonstrated in field tests where no organisms were detected by the all-glass impinger.

Compared with the all-glass impinger, the Andersen "Sampler" is reported to save both labor and expense. Because there is no plating process, there is a saving of many man-hours in the elimination of manifold dishwashing and glassware sterilization. While a little more time may be required for counting with the Sampler, considerable savings are realized in labor and materials, and results are obtained sooner.

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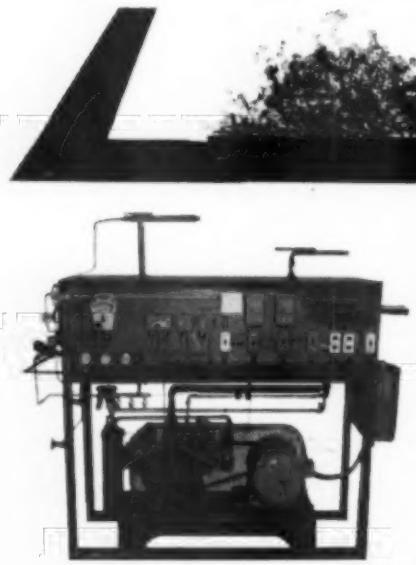

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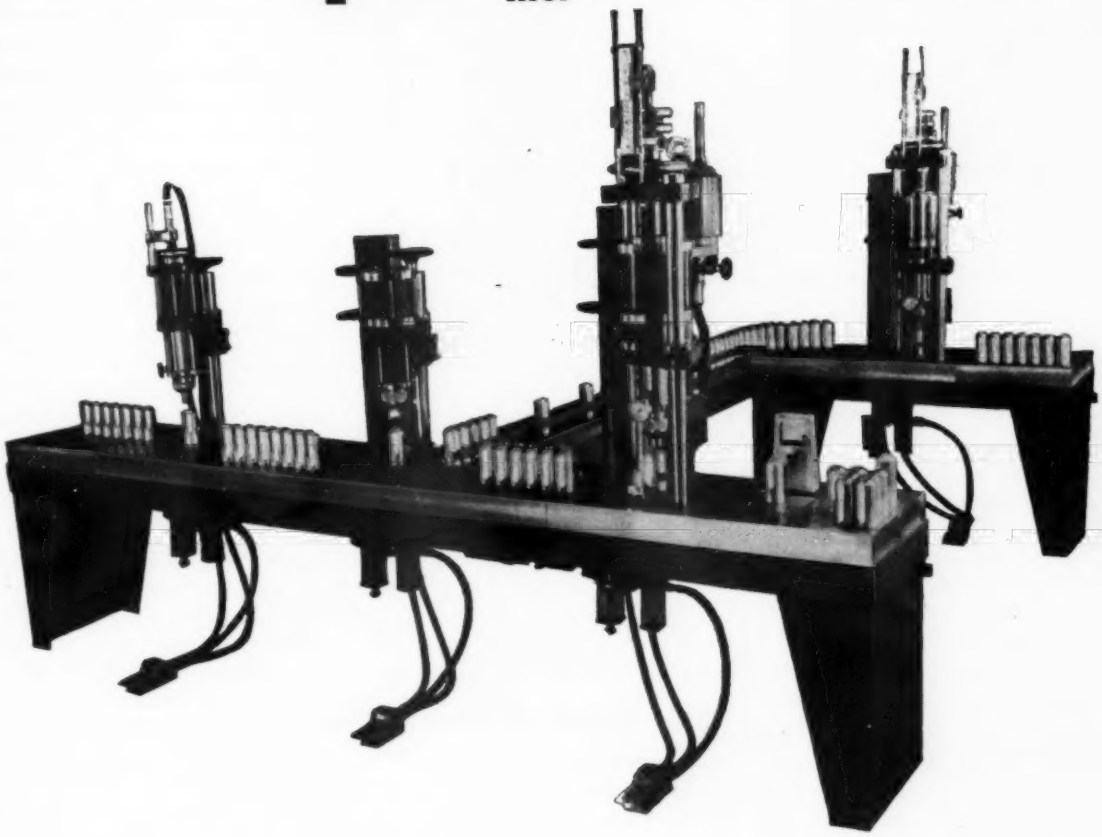

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Sales Representatives:

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A WM-DP semi-automatic Pressure Filling Unit with Product Filler and Valve Clincher serving two Propellant Chargers. These sturdy and efficient machines cover your loading requirements, large or small. Some details on the

Propellant Charger WM-DP 340:

Stainless Charging Cylinder, adjustable capacity— 5 to 375 g.
Charge Tolerance, under 100 g, fractional—over ± 1 g.
Operating Pressure, according to valve 6 to 8 Atü.
Gas Loss, less than 1%
Capacity: The above line with two Propellant, Chargers does over 8500 twelve ounce units per 8 hr. day. In six ounce units, according to valve and charge, 10 to 13 per minute.

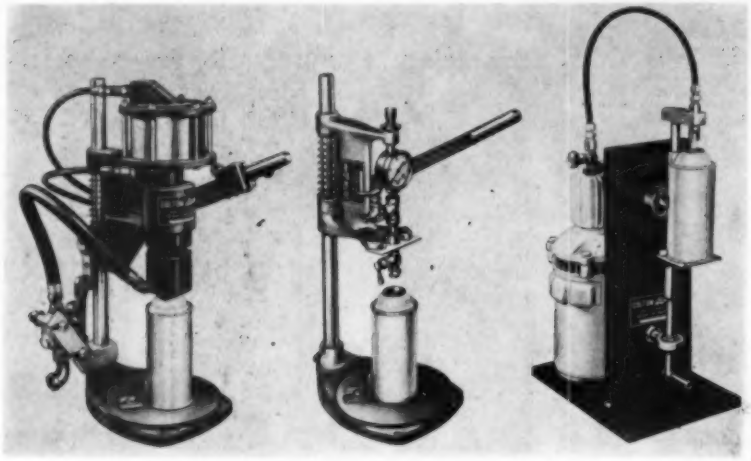
Other WM-DP Products:

Magnetic Chain Link and Tank Type Test Baths, Conveyor Lines and Tracks, Mufflers and Fast Exhaust Units, Propellant Pumps, Purgers, Complete Line of Laboratory Equipment, etc.

Valves for metal cans, glass bottles, foams and small (50 mlg) metered quantities. All valves are quick gassing, pressure fillable.

Concentrates, a large line of tested products, some for dilution up to 1:9.

Colton Introduces New Line of Single Station Fillers



The three new models of Colton-Alpha single-station machines for small-lot production and laboratory crimping and gassing operations are (left to right) the "Model 1302" air-operated vacuum crimper, the "Model 1401" gasser and tester for nitrogen propellants, and the "Model 1501" gasser and shaker for nitrous oxide and carbon dioxide propellant mixes.

A NEW line of Colton-Alpha single station machines for small-lot production and laboratory crimping and gassing operations on aerosol-type containers has been announced by Arthur Colton Company, 3400 E. Lafayette Ave., Detroit 7, Michigan.

The first unit in the new line is the "Model 1302" air-operated vacuum crimper. Air line connections are made to pressure and vacuum sources. To operate this unit, a product-filled container and valve assembly is placed on the work base. An arm is pulled down, which causes a head to seal the rim of the can. Downward travel of the sealing head causes a cam to actuate a vacuum air valve and evacuate air from the can around the valve assembly. With the container evacuated, the arm is pulled farther down and a trigger is operated, causing an air cylinder on top of the unit to actuate crimper jaws that permanently assemble the valve assembly to the container. Models without the vacuum feature are also available.

The second machine is the "Model 1401" gasser and tester, a unit designed for nitrogen and other compressed gas propellants. A hose connection is made to the nitrogen pressure vessel. The crimped container and valve assembly is placed on the work base and a handle on the side of the unit is pulled down, causing a valve adapter to engage the container valve. Both gas valves are opened and the container is filled with propellant to the proper pressure and both valves are shut. Then the handle is raised, the lower valve is opened and closed to bleed the pressure gage to a reading of a few pounds under expected can pressure. The handle is then lowered to engage the container valve, and the lower valve opened to test the propellant pressure in the container by reading the pressure gage. A negligible amount of pressure is lost from the container during testing because of the precharged condition of the gage.

The third unit in the line is the "Model 1501" gasser and shaker unit for use with such propellants as carbon dioxide and nitrous oxide mixtures that are mixed into the product. To operate the unit, a spring-loaded nozzle head is raised by a handle and the crimped container and valve assembly is placed on the work base. Then the handle is released and the nozzle head engages the container valve. The gas valve is opened and the motor switch is turned on. The motor agitates the container through an eccentric drive and ball joint mechanism while the propellant is pressure-fed into the container.

Union Carbide Announces Fungistatic Agent For Foods

Potassium sorbate, a water-soluble fungistatic agent for foods, has just been introduced by Union Carbide Chemicals Co., Division of Union Carbide Corp., New York. The new product, a white, crystalline powder will complement Sorbic, Carbide's refined sorbic acid widely used as a mold inhibitor in foods. Potassium sorbate will fill the needs of food processors requiring a fungistat that is more water-soluble than Sorbic. This new product will be particularly useful in sirups such as soft drink concentrates, pancake sirups, and fountain sirups; fruit juices, jams and preserves; cheese and cheese products, and other processed foods.

When substituting potassium sorbate for Sorbic, it may be necessary to increase somewhat the concentration of fungistat used. Generally, concentrations of less than 0.2 per cent will provide effective, safe mold control without affecting the taste or odor of the food. It is recommended, however, that the amount needed for specific food products be determined by individual tests, with 0.1 per cent of potassium sorbate, based on the weight of food to be protected, as a starting point.

Food processors can protect their products with potassium sorbate in a number of ways: by direct addition during mixing or blending; or by dipping or spraying with solutions where only an exposed surface need be treated.

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Polawax Information Booklet

A new 13-page product information brochure on "Polawax" a non-ionic emulsifying wax suited for aerosol products, has been issued by Croda Inc., New York. The product, a self-bodying emulsifier for aerosol hand lotions and creams, is said to differ significantly from all previously offered grades of this pharmaceutical and cosmetic base in that its oil-in-water producing properties do not derive from the presence of auxiliary anionic surface-active agents of the

soap, sulphonated oil, or sulphated fatty alchohol type, or from alkalies, gums, etc.

The booklet, which contains a number of sample formulations, is available by writing to the company at 15 E. 26th Street, New York 10.

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New Toxicology Journal

Toxicology and Applied Pharmacology, a new journal that will publish articles on chemicals, drugs, and food additives with emphasis on studies designed to establish their safe usage, will begin publication in January. It will be under the editorial supervision of Dr. Harry W. Hays, Toxicological Research Center, National Research Council; Dr. Frederick Coulston, Sterling Winthrop Research Institute; and Dr. Arnold J. Lehman, Division of Pharmacology, Food and Drug Administration.

The results of acute, subacute, and chronic toxicological investigations to establish tolerated, minimum effective, or toxic levels, will be acceptable for publication in the new journal. This will be accepted either as test results or as part of extensive evaluations of the hazards, of industrial, dietary, or environmental exposure, regardless of whether the findings are positive or negative.

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Labeling Law Compilation

The Chemical Specialties Manufacturers Association, New York, last month issued a *Compilation of Labeling Laws and Regulations For Hazardous Substances*. Included in the publication, which has been especially compiled for ready reference, are all laws and regulations for household use, both federal and state. However, it does not include pharmacy and poison laws, pesticide laws or food, drug and cosmetic laws.

The book was edited by John D. Conner, and Robert L. Ackerly, both of the office of the association's general counsel. It is available free on request to members of the CSMA and for $5 to non-members. Requests should be sent directly to the association office at 50 East 41st Street, New York 17.

Rotary Lab Agitator

A newly designed rotary liquid agitation laboratory apparatus for use in the cosmetic, pharmaceutical, and chemical specialty fields has been announced by New Brunswick Scientific Company of Somerset Street, New Brunswick, N. J.

Operating electrically, the unit—"Model ST Spinnerette"—eliminates need for manual shaking of test tubes or small vessels. It provides *four* rotating speeds and has the advantage of a changing tilt angle of platform to provide optimum variation in rate of mixing or agitation. Precision-built and compact in appearance, it affords smooth, quiet, maintenance-free operation over sustained periods of time.

Typical applications are: effecting small-scale extractions; mixing of liquid solutions emulsions, dispersions or colloids; culturing organisms, viruses, tissue cultures or cells; blood analysis; dialysing purposes.

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Risdon "Aero-Sales" Reprint

To help retail sales personnel do a more effective job of acquainting customers with the advantages of aerosol perfumes and colognes, Risdon Manufacturing Co., Naugatuck, Conn., has made available to fragrance manufacturers reprints of an article that appeared in the March issue of *Beauty Fashion* magazine. Called "Aero-Sales", the article has been reprinted in booklet form.

The idea for the article on how to sell aerosol fragrances developed from a survey of retail sales personnel, conducted by *Beauty Fashion* several months earlier, which revealed that many saleswomen are still unfamiliar with the advantages and operation of aerosol packaging.

•

Surface Active Agents

A new 32-page catalog illustrating the applications of the Miranol line of amphoteric surface active agents for industrial and cosmetic use is now available to processors. Included are sample formulations and technical data. The booklet is available from Miranol Chemical Co., 277 Coit Street, Irvington, N. J.

AEROFLEX® "P" DIP TUBES

QUALITY CONTROLLED—Every shipment laboratory tested for crack resistance

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Complete in every way, the plant has an aerosol production line operating at 120 units per minute, a magnificent custom-designed refrigeration system, propellent storage tanks, an approved bulk alcohol installation, compounding facilities, laboratory, warehouse and beautiful office space. The purchaser will receive as a bonus over two years of effort and planning. Almost a year alone was required to make the installation in accordance with the various codes of the city of Los Angeles. But the result is a plant that is both safe and economical to operate. The plant has been in full operation until now, and could begin manufacturing your requirements almost immediately. If prompt action were taken, the plant's trained personnel might be retained. To arrange for an inspection and complete information, principals only should contact:

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CSMA Aerosol Awards Contest Rules Announced

FINAL contest categories and entry details for the seventh annual Aerosol Package Awards Contest were announced during the first week of August by the Aerosol Awards Committee of the Chemical Specialties Manufacturers Association. In recognition of the growing role of food products in the aerosol field, a special category of "food products" was added, bringing the total number of categories to 11. Also the category which last year was called "glass and plastic aerosols" becomes "perfumes, colognes, and toilet waters" for the 1958 contest.

The eleven classes, or categories are:

1. Insecticides, repellents, and moth proofers.
2. Room deodorants.
3. Paints, enamels, other protective coatings, and paint remover.
4. Other household products—snow, polishes, glass cleaner, rug shampoos, water repellents, etc.
5. Shave products.
6. Hair preparations.
7. Perfumes, colognes, and toilet waters.
8. Other personal products—shampoos, body deodorants, dentifrice, sun tan oil, etc.
9. Medicinal and pharmaceutical products.
10. Industrial products—lubricants, stencil inks, belt dressings, etc.
11. Food products.

As in previous years, entries are open to any aerosol brand owner or marketer, anywhere in the world, and are not restricted to members of the CSMA. There are no entry fees or other charges to entrants, though the product must be on the market and have been freely offered for sale prior to Sept. 1, 1958.

In addition to the 11 category awards, a best-of-show package will be honored by the judging committee. The awards will be announced and all entries will be on display at the 45th annual meeting of the CSMA, at the Commodore Hotel, New York, Dec. 8-10. Entries close Oct. 15, and entries should be sent to the Aerosol Awards Committee, at the office of the CSMA, 50 W. 41st Street, New York 17, N. Y. Entry blanks for the contest can be obtained by writing directly to the CSMA office.

•

Dingfelder Heads Renaud

Adolph Dingfelder, vice-president of Renaud, Ltd., New York essential oils and aromatics firm, has been elected president to succeed George J. Tombak, who died June 23.

Mr. Dingfelder, formerly with Felton Chemical Co., joined Renaud last year.

•

Aerosols in H. S. Course

A course in cosmetics and perfumery, that will include a lecture on aerosol preparations, will be given by Frank J. Steele, chief pharmacist of the Greenwich Hospital, Greenwich, Conn. at the Adult Education Night School in Greenwich High School. The course to begin in September is designed to aid those in the field, and to assist those who are seeking positions.

The course will include dentifrices, antiperspirants, baby toiletries, sun tan preparations, make-up, face-powders, and a number of other subjects, as well as aerosols.

•

Fritzsche Moves in Chicago

Fritzsche Brothers Inc., New York, has announced a change of address for its Chicago office. The office will now be located at 5537 N. Clark Street, Chicago 40, Ill. The telephone number is Longbeach 1-9271.

Risdon Valve

(*From Page* 24)

caps, and metal components for the "Mini-Mist" dispenser) and at the same time is supplying parts that are similar to those being shipped in by some of the custom fabricators, there is no difference in the inspection methods for the various shipments. Components from any source must meet specifications or be rejected.

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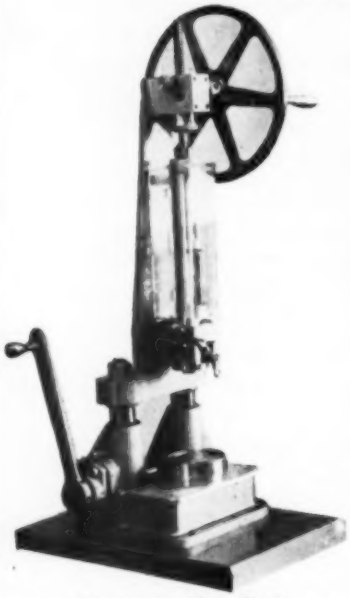

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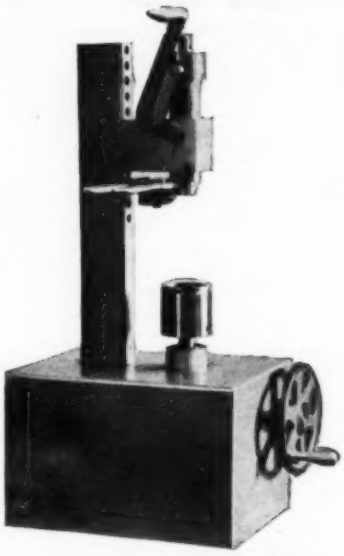

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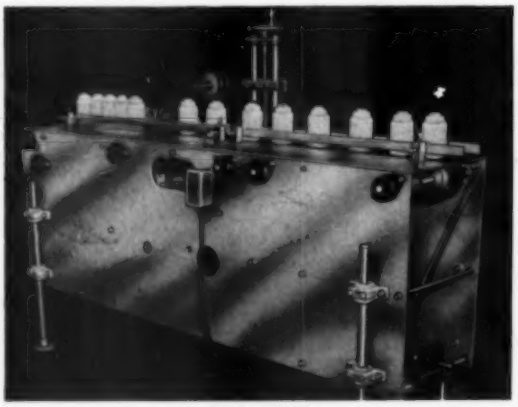

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At the Danbury plant samples of all plastic, rubber, and metal components undergo the following series of tests, *before* they go to the assembly line:

1. A standard deviation test to insure that components conform to specification of size (width, depth, length, radius, and other dimensions), contour, and other variations. A sensitive "Contour Projector", accurate to one-half of a thousandth of an inch, enlarges the image of each component to 300 times its normal size so that it can be measured precisely.

2. Some parts, such as the tiny metal insert in the "Micro-Mist" actuator, are examined under a microscope for the presence of burrs.

3. Joined plastic parts are subjected to a special stress-cracking test to simulate the corrosive effects of various oils and chemicals found in aerosol formulations. This test is used on a statistical sampling basis on dip tubes and open-end assemblies of components as well as on polyethylene actuators.

4. A hydrostatic testing machine is used to test performance of assembled valves under both normal and excessive pressure conditions.

IN addition to this rigid inspection of all incoming parts, the quality control staff is charged with the responsibility of checking components in work and components held in stock, to assure their continued acceptability. In addition to the quality control personnel spotted throughout the assembly area, the department maintains roving inspectors to double check the valve assemblies at each inspection station.

A specially-designed spray-testing booth is used to check samples of the assembled valves. For the "Micro-Mist" actuators, water under pressure, simulating the actual packaging pressure, is sprayed against a "target" which is marked to show whether the spray is too concentrated or too wide. The same station isused to check that metering valves emit a measured quantity at a single burst.

Since dust can be almost as much of a hazard to valve operation as faulty parts or improper assembly, Risdon takes special pains to keep its assembly area clean and dust-free. Before the assembly operation, all components are cleaned and any possible extraneous matter is shaken out. In addition, the area is vacuumed after every shift to remove possible dust, splinters, and other foreign elements. As a further precaution, gauges, tools, and other instruments used in inspection are maintained and checked on a continuing basis, and all gauges and tools are cleaned, and oiled at least once a week.

For all its quality control tests, Risdon bases its sampling plan on stringent government standards, similar to those used in other close tolerance manufacturing fields.

Besides its excellence in research, quality control, and production, Risdon has a world-wide marketing and licensing set-up that has done much to spread the aerosol idea to various corners of the globe. Through Pegasus International Corp., New York international business consultants, Risdon has license arrangements wth manufacturers in six foreign countries: Australia, France, Germany, Great Britain, Italy, and Japan. Similar arrangements are pending in other areas, notably South America.

What's ahead for Risdon in the aerosol business? According to Messrs. Beard and Tuttle, the company will continue to grow with the expanded use of pressurized products and to maintain its present position in the perfume, cologne, pharmaceutical and household fields. There will be more of the mass-volume products such as "Jet Spray Bon Ami" and "Pledge", plus a whole new series of cosmetic and pharmaceutical products—many powered by nitrogen.

It is expected that food and pharmaceutical products will begin to reach the market in increasing volume toward the end of the year, many of them in glass containers, using various versions of Risdon's metering and non-metering valves.

Further, the "Micro-Mist" actuator

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will continue to be called on for the new packages requiring lace-like, wide cone sprays, and for packages with special problem formulations.

There will be ever-continuing research and development of new and special-purpose high performance valves.

No matter how far the aerosol market goes, and in no matter how many directions, it would seem that Risdon will surely be among the leaders.★

Label Design

(*From Page* 27)

sols, we attempted to make it appealing enough for the housewife so that she will use it repeatedly, and remember it the next time the salesman calls. Also, with a line of household products, there is the more materialistic objective. It is the attractive package that will be left out on the kitchen and bathroom shelf and will be subjected to more constant use."

As another consideration that may be overlooked by the aerosol marketer, Mr. de Bang suggests: "The salesman is far more sophisticated in taste than he is generally given credit for, and to do a particularly good job on selling a product, he too must be sold on it. Though he may not be able to furnish reasons why he is impressed with a package, he can definitely sense the difference *negatively* between a well-designed and a poorly-designed package."

Though he didn't comment further on this particular point, Mr. de Bang seemed convinced that selling the salesman on the attractiveness of the package is highly important. He commented that any negative attitude toward a particular product is often enough to eliminate border-line decisions by the consumer on whether to buy or not to buy.

This type of product can have an important bearing on the design of the aerosol package. Because Electrolux's "Insect Killer" is sold to a predominantly female audience that tends to be squeamish about destroying insects, the killing characteristics of the product are played down. Artwork or other visual images of dead insects were eliminated, and even the words "Insect Killer" are in a relatively light face type.

With all four products of the Electrolux aerosol line, a decided family resemblance was maintained. The "Electrolux" signature appears in the same relative position on the label of each product, all have the same white over-cap, and all have generally similar horizontal and vertical space and color relationships. The same color tone (though not the same color) is the second color on each label.

When queried about some general principles of aerosol label design, Mr. de Bang made the following comments:

"The choice of type should be treated as an important part of the design element in any label. Intelligent choice of type faces, weight, and sizes are almost as vital to the success of the label as color and overall design. On the other hand legibility must not be sacrificed for a 'pretty' design.

"...The label designer in the aerosol industry, even the small packager who designs his own, should study the findings of Louis Cheskin (President of the Color Research Institute) and other commonly recognized authorities in the field of motivational research.

"...The psychological advantage of a well designed package has been proven time and time again on the competitive market. No matter how minor it may seem, it can be a major aid to selling. Improvement of color and general design of any label will almost inevitably mean a better selling product.

"The extra expense of a professional package designer with psychological orientation is well worthwhile, since it will usually result in:

1. a more attractive package (emotionally).
2. a more persuasive package.
3. a more substantially distinctive package.
4. a better product (in the mind of the consumer).
5. added sales incentive for the salesman or store clerk.
6. attractiveness in the home that will result in constant use of the product and faster resale."★

INDUSTRY CALENDAR

Aug. 11-13—Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco.

Sept. 1-12—American Chemical Society, National Meeting, Chicago.

Sept. 29-Oct. 3—National Hardware Show, Coliseum, New York City.

Oct. 13-15—Packaging Institute, 20th annual forum, Edgewater Beach Hotel, Chicago, Ill.

Oct. 14-16—Society of Industrial Packaging and Materials Handling Engineers, 13th Annual Exposition, Coliseum, Chicago.

Oct. 20-24—National Safety Congress and Exposition, Industrial Safety Meeting, Conrad Hilton Hotel, Chicago, Ill.

Oct. 28-29—Northwest Garden Supply Trade Show, Portland, Oregon.

Oct. 29-31 — National Agricultural Chemicals Association, Bon Aire Hotel, Augusta, Georgia.

No. 13-14—Canadian Chemical Specialties Manufacturers, 1st annual meeting, Queen Elizabeth Hotel, Montreal, Canada.

Dec. 9-11—Chemical Specialties Manufacturers Association, 45th annual meeting, Commodore Hotel, New York, N. Y.

Pressure Packaging Overseas

(*From Page* 40)

We have heard from two valve manufacturers (France and Germany who say they are completely sold out for the balance of the year. The container manufacturers are hard pushed to meet some of their schedules, the propellant manufacturers have a cylinder shortage, and the loading equipment manufacturers are being pushed for more prompt deliveries. The loaders are running about full tilt and many on the outside are scrambling to get into production. So far there are no real shortages. Component suppliers, correctly anticipating this year's growth, have been able to stay ahead of demand with their present and projected facilities.

For a few years past we have been

estimating (and we repeat "estimating") European aerosol production. In Europe, production and capacity statistics are highly secret and scarcely ever made public. Generally, no one wants to let the other fellow know how badly or how well he is doing. Depending on whether he is talking with a customer or a competitor, he is doing either "exceedingly well" or "miserably bad." The truth of the matter generally lies somewhere in between, but actual figures are never available. The "sold-out" remarks above were slips of the tongue casually made and carefully noted, not official statements. Thus, our information has to be gathered from all kinds of sources, both those in the industry and those outside intending to get into it. It comes from component suppliers, chemical companies, plastic manufacturers, steel companies noting tinplate requirements, lacquer manufacturers delivering only for aerosol containers, forwarding agents, etc. etc." Despite the variety and cross-section of our information sources and despite all efforts to verify, the figures can be no more than a good guess. We never have claimed anything more for them, but once they are published, then come the lesser prophets, who claim that our guesses are either too large or too small.

Below are our aerosol production figures for 1957 for the various European countries with filling capacities.

The maxima of our 1956 estimates (also in ranges) are shown at the right. Measured from these maxima, the increase for 1957 over 1956 is 100%. This is admittedly on the high side, but it was purposely estimated generously to offset the low estimates for 1956. If we were to first adjust the 1956 estimates, the 1957 increase would still be at least 75%, which over-all is probably more nearly right. In some countries, production undoubtedly increased 100% or more and the minimum increase for any one country was probably not less than 50%. Our figures for 1957 — give or take a few hundred thousands here and there — are, we believe, substantially correct.

As to product break-down, again based on educated guessing, we would be inclined to put them in the following volume order for the leading four products, which may well account for at least 75% of the total:-

Insect Sprays (insecticides, moth-proofers, etc.)

Hair Sprays

Room Deodorants

Cosmetic Products (perfume, eau de colognes, etc.).

It is significant that a leading U. S. product, shaving lathers, does not even make the list in Europe. Only a few countries have their own locally-produced products, the rest being U. S. brand names usually filled locally. In our opinion, the reason shaving lathers have never really gotten started in Europe is because of their relatively high end price. It is not that European men do not shave, or that they predominantly use electric razors, or get themselves shaved in barber shops, but simply that the price of a six-ounce can (at the equivalent of not

EUROPEAN 1957 AEROSOL PRODUCTION
(Filled Containers — All Products)

		1956 — *Maxima*
Austria	300,000 to 400,000	80,000
Belgium	2,000,000 to 2,500,000	800,000
Denmark	500,000 to 600,000	300,000
England	13,000,000 to 14,000,000	7,500,000
Finland	600,000 to 700,000	300,000
France	7,000,000 to 8,000,000	3,500,000
Germany	12,000,000 to 13,000,000	6,000,000
Holland	1,200,000 to 1,500,000	400,000
Italy	11,000,000 to 12,000,000	8,000,000
Norway	450,000 to 500,000	75,000
Portugal	200,000 to 250,000	75,000
Sweden	1,000,000 to 1,250,000	350,000
Switzerland	1,700,000 to 2,000,000	750,000
Spain	50,000 to 60,000	.....
	51,000,000 to 56,760,000	28,130,000

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less than $1.00 U. S.) is beyond the purchasing power of the average European. If the price could be brought down about 25%, we believe there would be a good market.

We sincerely hope that at least one of Europe's new crop of aerosol trade associations will start a project of gathering these industry statistics. However, in Europe the practice has been confined to cartel operations, which are now tabu. For any one manufacturer, whether in the field of containers, valves, or finished end products, these cartels can tell him where he stands. Based on his production facilities he ought to be getting a certain share of the market, and if this is too low, there may be something wrong with his product, service, delivery, or even price. If he *is* getting more than his share, he will probably never be heard from. Such statistics not only tell a story for the individual manufacturers, but also — and this is most important — they clearly show whether the public likes the product, which ones are prefered, and something about what future potential markets may be. In the last analysis, it is the buying public which has to be satisfied and nothing shows its taste better than the volume of the different kinds of products that are bought at the prices offered.★

Aerosols in Review

(*From Page* 46)

per can; and while this is less impressive than a dime, it still means a clear $10,000 to $30,000 cost reduction per million cans—an interesting figure!

"It must be understood that these savings can result only after an investment in formulation development and modifications in production equipment and facilities. In considering how best to jiggle the paint formula, the chemist has to worry about the pressure in the package, compatibility of paint and propellant to maintain solution and suspension, and flammability of the spray discharge. ICC regulations limit the pressure in the can to 40 psig at 70°F. with LP gases, and at no time can the vapor pressure of the propellant and solvent exceed this. Since the LP gases have a higher Kauri Butanol value than the fluorinated hydrocarbons, the compatibility of the resins poses no additional problem. On the other hand, the markedly lower specific gravity of the LP gases requires adjustments to maintain pigment suspension."

Mr. Gaines advises that each paint formulation will have to be evaluated by itself, since no single blend of propellants can be used for any and all products. The capital investment in equipment and production facilities to safely handle the flammable LP gases will be an important consideration, he declared. "While pressure vessels are needed for the standard propellants, adding LP gas to the propellant systems calls for extensive and expensive installations to blend the mixture. Whether the two types of propellants are mixed directly or whether the LP gas is incorporated into the solvent system, the blending tanks must be mounted on scales to assure the necessary accuracy in compounding. At the same time the entire storage and transfer systems must be designed to handle the pressures developed—refrigeration to put LP gas in a liquid state at normal pressures is impractically expensive."

He declares that the necessity of having all light and power facilities explosion-proof, and of maintaining adequate ventilation and exhaust to free the air of explosive concentrations of vapors will add to the expense. "The need to keep all vapors within a closed system definitely recommends the pressure fill method of charging the propellant to the package. This, unhappily, is the slow way to load paint cans. Whether custom fillers with their long runs find that slower production is outweighed by reduced propellant costs remains to be seen. The individual paint company doing its own filling may find production capacity no serious matter, however."

Mr. Gaines also discussed compressed gases as a possibility for dispensing paints. However, under present conditions, he advises, any such large scale packaging of standard solvent-based paints is unlikely because of the diminishing pressures that would inevitably result as the product is expended and the head space increased.

For water-based paints, he points out, there might be definite possibilities. "The actual weight of gas dissolved in the paint is small, so there would not be as great a blast effect of the escaping propellant to create atomization as there is with liquefiable propellants. However, the pressure is constant; and the mechanical breakup tip on the valve will give a good spray.

"The development of a pressurized package of water-based paint will require consideration of various factors. First is the requirement that the gas be entrained in the paint solution, which implies the study of solubility and the possibilities of co-solvents and emulsifiers — still bearing in mind the limits of maximum allowable pressure. There will obviously be no flammability problems, but the problem of can and valve corrosion will be accentuated. Many different can linings have been developed already; each must be evaluated with each individual paint to assure adequate shelf life. The overall economics of water-based aerosol paint seem excellent since the propellant, an important cost factor, would be in far-reduced concentrations and relatively inexpensive."

The *Review's* second paint article is a description of the new filling facilities of Aeropak Inc., whose plant burned down in May 1957. "From the fire Aeropak was able to salvage next to nothing. From the old plant came a few motors, a number of storage tanks, and certain pieces of material handling equipment.

"For the new production line, only a short length of water bath was usable. A number of excellent table top chain conveyors came with the new building, and some of these fit beautifully into the line. Everything else is new. The series of units linked by 200 running feet of conveyors

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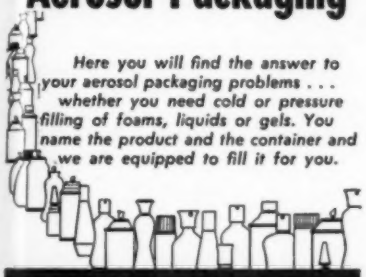

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". . . Fast, deep chilling of paint and propellant plus quick change-over of colors are the twin keys to the remarkable production capacity. Most of the answer is bound up in the product chiller, a Votator unit that will take enamel from 80°F. to a flat zero in less than 60 seconds at the rate of a 54-gallon drum every 15 minutes. Its a continuous sort of process — in less than a minute the first chilled enamel starts coming through, and in 15 minutes the entire drum has been cooled. This is about four times as fast as the excellent tube cooling system Aeropak was using in its old plant. Since modern cold filling equipment is usually handcuffed to the rate at which ingredients can be chilled and fed to it, this single factor alone has quadrupled potential filling speed!"★

Pressure Food Products

(*From Page* 30)

Nitrogen is inert to foods and is only very slightly soluble in most food products. It has found its greatest use where it is desirable to have solid stream delivery with a minimum of foaming or bubbling.

Nitrogen Propellant Studies

As nitrogen became more important as a propellant for solid stream delivery of foods, many conflicting ideas arose concerning various aspects of gassing and gassing procedure. High acid and high sugar products ordinarily preserved by filling and closing hot will also require the same procedure when pressure packed. To insure product sterility, it is therefore necessary to gas while the product is still hot.

A series of tests was initiated in which the effect of agitated versus static gassing and hot versus cold gassing were studied in order to determine: (1) the feasibility of gassing a product hot as related to initial and equilibrium pressures; (2) the weight of nitrogen which could be introduced into a can by different gassing procedures; (3) the effect of gassing procedures and conditions on the appearance of the dispensed product; and (4) the residual pressure when all product is discharged from the can.

Test Procedures

The tests were conducted with water, 30° Brix syrup, 60° Brix syrup, chocolate syrup, catsup, and cottonseed oil. All tests were made with 211 x 604 pressure cans having a 1" cup opening and a fill of 11 fluid ounces. The fill was determined by the weight of 11 fluid ounces of each product at room temperature.

In cold fill tests, 24 cans of each product were filled and closed at room temperature. They were then weighed to within 4 or 5 milligrams on an analytical balance which had a capacity of 750 grams. Twelve cans were then gassed with agitation and 12 cans were gassed statically with nitrogen at 90 p. s. i. g. They were reweighed and the weight of nitrogen introduced into the cans determined by difference in weight before and after gassing. The agitated samples were gassed on a shaker* operating at 350 cycles per minute.

In tests with hot fill and gassing, each product was filled and closed at 190°F. Cans were allowed to cool during weighing. They were then reheated to 190°F. and gassed at 120 p. s. i. g. with nitrogen. Agitated and static gassing were used with each product. Weight of nitrogen was again determined by difference.

The pressures measured after 24 hours were considered to be equilibrium pressures. Pressures were also obtained on cans of each product after extended storage. All pressures were taken with a pre-pressurized gauge.

Weight of Nitrogen in Can

Table II shows the weight of nitrogen introduced by different gassing procedures, equilibrium pressures, and residual pressures.

Close agreement was found between the experimental and calculated weight of nitrogen which could be

introduced into a 16 ounce pressure can filled with 11 fluid ounces and gassed statically at 90 p. s. i. g. at room temperature. A 211 x 604 pressure can has a capacity of about 17.5 fluid ounces which leaves a 6.5 fluid ounce headspace when filled with 11 fluid ounces. Theoretically, the weight of nitrogen which can be introduced into this space under the conditions mentioned, assuming air at 1 atmosphere pressure already present in the headspace, would be about 1.335 grams. Experimentally the average weight introduced into cans of all products ranged from 1.333 to 1.368 grams.

Agitation of most products filled and gassed cold showed only slight increase in the weight of nitrogen which could be introduced into the cans. Agitation resulted in an average increase of 2 to 5% for all products. Oil was a notable exception. It showed a substantial increase of 9% in the amount of nitrogen that could be introduced by agitation. This is attributed to the fact that nitrogen has a greater solubility in oil.

Table II shows that more nitrogen by weight is required to gas hot filled cans than cold filled cans to arrive at the same equilibrium pressure at room temperature. The reason is that the headspace of the cold filled cans contained one atmosphere of air when closed, while the headspace of the hot filled cans was partially occupied by product vapors.

Hot filled products gassed statically required 5 to 8% more nitrogen than cold filled products gassed statically. With agitated hot filled products, the weight increase was 2 to 7% over cold filled cans gassed with agitation. In general, agitation had little or no effect on the weight of nitrogen introduced into cans gassed with the product at 190°F.

Feasibility of Hot Gassing

The results of these tests indicate that charging pressures necessary to gas a product with nitrogen at 190°F. are not excessive. The charging pressures required are 30 to 40 p. s. i. g. higher than the pressure desired at 70°F. The exact charging pressure will have to be determined by trial, however, since it will depend to some extent on the vapor pressure of the product.

The effect of vapor pressure on equilibrium pressure is shown by the different hot gassed products. Water with a high vapor pressure showed a greater pressure drop than syrups which have lower vapor pressures.

Residual Pressures

Pressures of 85 to 90 p. s. i. g. were sufficient to dispense the 11 fluid ounces of each product tested. With less fill, even smaller initial pressures may be adequate.

The calculated pressure which should remain when 11 fluid ounces of product are completely discharged from a 16 ounce can having an initial pressure of 90 p. s. i. g. would be 23 p. s. i. g. Residual pressures in cans of each product tested ranged from 3 to 12 p. s. i. g. greater than this depending on the retention of product in the can. In no instance was all of the product dispensed.

The more fluid products such as water and 30° Brix syrup showed residual pressures 4 to 5 p. s. i. g. greater than calculated with a 3 to 5% product retention. Catsup which had 25 to 30 % retention showed residual pressures 10 to 12 p. s. i. g. greater than the calculated pressure which should remain if all the product was discharged.

Dispensing Tests

Product Appearance

The following observations on dispensing were made within a week after packing.

Even though nitrogen is only slightly soluble in most food products, this slight solubility may have an objectionable effect on the dispensed product. The method of gassing — agitated or static — also has an effect on the characteristics of the dispensed product. Hot or cold gassing show no difference in effect on the dispensed product.

Water and 30° Brix syrup, gassed either agitated or statically, were dispensed with a milky white appearance due to small gas bubbles. The bubbles dispersed quickly, however, and may or may not be considered objectionable.

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When the more viscous chocolate and 60° Brix syrup were gassed with agitation, sufficient gas was trapped in the syrups to make them have a foamy appearance when dispensed. When these products were gassed statically, the product dispensed satisfactorily although some bubble formation was noticed eventually beneath the surface of the clear 60° Brix syrup.

Catsup was dispensed with only very slight discoloration when it was gassed in a static condition. When it was gassed with agitation it dispensed with an objectionable orange color. It is not known whether this effect would be noticed after extended storage.

Nitrogen is somewhat more soluble in oil than in other products. This solubility caused considerable frothing which continued for 1 to 2 minutes.

Product Retention

Another problem facing the pressure packing food field is that of excessive product retention in the case of higher viscosity products. Cavitation may also occur with some products on dispensing, allowing the gas to escape and leaving large quantities of product hanging on the container walls.

To date this problem has been alleviated by product reformulation to a lower viscosity. Treating the container walls with a slip compound and/or a lubricating oil to reduce product clingage to the side walls possibly may be helpful with some products.

Dip tube type valves require indexing the valve cup so that the actuator can be aligned with the dip tube to insure adequate removal of the product. The natural curvature of the dip tube allows the lower end of the tube to be positioned at the side wall of the lower end of the container. By locating the actuator spout on the same side of the container, the dip tube is at the lowest point in the can when it is tilted forward.

Product Stability

Pressure packing itself has no inhibiting effect on the growth of spoilage organisms. Essentially the same rules should apply to pressure packing as for regular packing.[1] High acid and high sugar products ordinarily preserved by packing hot should be filled and gassed hot in order to prevent spoilage. It was shown earlier that this packing procedure was feasible for pressure packing. Pressure packing of low acid foods which ordinarily require processing at 240°F. or higher must be considered an entirely different problem. Special aseptic canning procedures requiring complex equipment and precise control must be used. Adaption of aseptic canning to pressurized foods presents formidable problems.

Product changes that occur upon dispensing in which gas solubility is not a factor are also sometimes observed. Products with a gel structure may have a tendency to break down under pressure or on dispensing; those with thixotropic properties may set up after standing, but immediately after dispensing give the appearance of a reduced viscosity material.

Color and flavor retention are other factors which must be considered. Test packs which have been stored for extended periods enable selection of container and valve components which are compatible with the product. All materials which come in contact with food should be acceptable to the Food and Drug Administration.

Summary

General packaging requirements as well as problems connected with pressure packaging of food products have been discussed in this paper. An experimental study of gassing and filling procedures was presented. This study demonstrated the feasibility of hot filling and gassing. An experimental determination of the loss of nitrogen from pressure containers has shown the loss to be negligible under ordinary conditions for the period of several months that the test has been under way.★

[1] Hayes, G. L., and Riester, D. W., *Microbiological Aspects of Pressurized Foods.*

Mewhort to Revlon Post

William D. Mewhort, former vice-president and treasurer of Textron, Inc., manufacturer of textiles, metal products, and electronic equipment, has been appointed to the new post of executive vice-president of administration and operations for Revlon, Inc., New York cosmetic and aerosol marketer.

The announcement followed by a month the news that Martin Revson, brother of Revlon president Charles Revson, had resigned as executive vice-president in charge of marketing.

TGA Maine Meeting

(*From Page* 32)

claims also came in for comment by Earl W. Kintner, general counsel for the Federal Trade Commission. "In the last three decades," he declared, "the Federal Trade Commission has found it necessary to give *considerable* attention to cosmetics and related products of the toilet goods industry. Since promotion is so essential and so substantial a factor in your industry, it is understandable why false and misleading claims in the marketing of such products have been so persistently the subject of corrective action by the Federal Trade Commission.

"For example the Commission has been active in effecting correction in a widely prevalent situation which existed in the perfume market. The challenged practice involved misrepresentation as to price and origin. Also involved was the practice of simulating well-known and established brand names.

"Claims for anti-perspirants have been challenged, such as 'stops underarm odors', 'stops perspiration'. Some such claims have been allowed, provided disclosure is made in conjunction therewith that the products do not have a permanent effect on underarm odor or underarm moisture."

Mr. Kintner briefly described the activities of the "relatively small advertising unit of the FTC, which he said surveyed advertising in 42 magazines, 281 newspapers, and 728 radio and television continuities during one 28-day period. "Over 700 questionable advertisements were referred to the Commission's bureau of investigation. 141 matters were referred to the bureau of consultation as possible violations of trade practice rules and stipulations. This questionable material was selected from 200 newspapers each week, 50 national magazines each month, and the commercial continuities of approximately 200 radio and television stations each week.

"In addition there were scores of complaints from the public and from competitors, not to mention the results from many hours of monitoring and recording television commercials by qualified attorneys in the Commission's nine field offices."

Turning to what he termed "current policies and philosophy in trade regulation", Mr. Kintner declared that the FTC is making a "major effort to broaden its effectiveness by speaking directly to businessmen and consumers in language with a minimum of legalese.

"We're doing this in two principal ways: The first is to approach industry-wide problems on a voluntary basis if this is at all feasible. Certainly it stands to reason that tremendous good can come from an industry's understanding of what, in the opinion of the FTC, the law forbids. This goes a long way toward eliminating violations of the law due to ignorance or misunderstanding. It narrows the field of law violators to those who, with full knowledge of their acts, choose to ignore the Commission's advice. And I might add, the Commission is thereby provided with a more sharply defined target.

"The voluntary methods include issuing trade practice rules for an entire industry, and very recently a development which we call voluntary Industry Guides. The trade practice rules cover all industry practices that might be affected by laws the Commission administers, whereas the guides are designed to single out a particular area of difficulty.

"...The 1958 antitrust and trade regulation enforcement is vigorous

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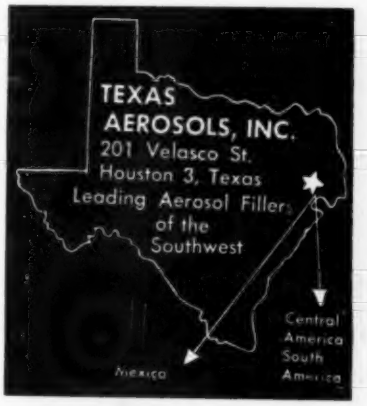

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but it is not spiteful nor entirely unpredictable. There are plenty of traditional hard-core violations for us to sink our enforcement teeth into, many unresolved areas of trade regulation law, without our having to resort to quixotic campaigns against very technical questionable, but competitively innocuous, practices."★

Aerosols in Great Britain

(*From Page* 34)

for each dispenser. I am informed by Safca Aerosol Manufacturing Ltd. that altogether they now pack 50 different shades of touch-up lacquers, not only for the British Motor Corp.

S. C. Johnson's new aerosol auto wax, "Instant One-Step" is the first such product in Great Britain.

but also for such other important firms as the Rootes Group, Renault, and Lambretta. While these paints are not being packed in large quantities this is nevertheless a step in the right direction and should result in stimulating other firms to enter this market.

The increase in pressurized packing has brought about an increasing interest by the various filling equipment suppliers and Aeratom, A.G., of Switzerland, has appointed Ideal Packagings, Ltd. of London as their British agents. A new company, Aerofill, Ltd., was formed recently and has taken over the manufacture of the pressure filling equipment hitherto carried on by I. F. Eyles (Refrigeration) Ltd.

The last meeting of the 1957/58 session of the Pressure Packaging Discussion Group of the Institute of Packaging was addressed by W. S. Green of the Research Department, Imperial Smelting Corp., the manufacturer of "Isceon" fluorinated propellants. Mr. Green's discourse dealt with the physical and chemical properties of the fluorinated propellants generally used for pressurized packaging and indicated the reasons for choosing certain propellants for particular products. The lecturer also explained the nomenclature employed not only by his own company but also by competitors.

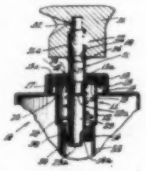
In this connection it might not be amiss to acquaint American readers with the "Arcton" nomenclature. "Arctons" are manufactured by Imperial Chemical Industries Ltd., which employs a nomenclature differing widely from that adopted by the majority of other propellant manufacturers. Methane derivatives are followed by a one-figure number and ethane derivatives are followed by a two-figure number. Each chlorine atom is equivalent to 3 and each hydrogen atom is equivalent to 1. Thus dichlorodifluoromethane ("Freon", "Genetron" and "Isotron" 12), chemical formula $CC1_2F_2$ has two chlorine atoms and is therefore termed "Arcton 6." Chlorodifluoromethane ("Freon", "Genetron" and "Isotron" 22), chemical formula $CCHF_2$ contains one chlorine atom and one hydrogen atom and is therefore designated "Arcton 4." Symmetrical dichlorotetrafluoroethane ("Freon" and "Isotron" 114), chemical formula $CC1F_2.CC1F_2$ has one chlorine atom attached to each carbon atom and is designated "Arcton 33." Trichlorotrifluoroethane ("Freon", "Genetron" and "Isotron" 113) with two chlorine atoms on one carbon atom and one chlorine atom attached to the other carbon atom is "Arcton 63." Chlorotrifluoroethane, chemical formula $CH_2C1.CF_3$ becomes "Arcton 50", the O indicating that neither hydrogen nor chlorine atoms are attached to one of the carbon atoms in this ethane derivative.★

New Aerosol Patents

Listed below is a brief review of recent patents pertinent to the aerosol and related industries.

Complete copies of these patents may be obtained by writing to the publisher of this magazine, Aerosol Publications, Box 31, Caldwell, N. J., and remitting 50c for each copy desired. For orders received outside of the United States the cost will be $1.00 per copy.

2,837,249. Aerosol Valve. Issued June 3 to Philip Meshberg, Fairfield, Conn.



In a valve means for controlling the discharge of a measured amount of fluid under pressure from a container having a tubular measuring chamber, a combined resilient sealing gasket and first valve disk having a bore mounted at the outer end of the chamber and a second resilient valve disk having a bore mounted adjacent the inner end of the chamber, a valve stem mounted in said chamber and having portions extending through the bores in the valve disks and a sealing portion cooperating with the first disk to seal the container and a portion at the inner end passing through the second valve disk and having means to control passage of fluid from the container to the chamber, and means urging the stem into sealing position, movement of said stem against the urging means a predetermined distance from normal sealing position to a dispensing position causing said sealing portion to be moved out of sealing relation with the first valve disk and causing the stem to cooperate with the second valve disk to seal the chamber from the container prior to the breaking of the seal at the first valve disk, thereby dispensing only the fluid in the measuring chamber, the improvement wherein said stem comprises an inner and outer tubular member, each having a closed inner end, the other end of the inner member being sealingly secured to the inner end of the outer member and wherein the means cooperating with the second valve disk comprises a portion of reduced diameter on the inner member adapted to be normally disposed in the bore thereof and connect the chamber with the container and to be moved out of the bore when the stem is moved to dispensing position.

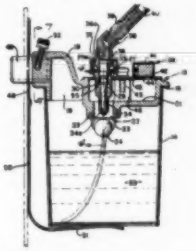
●

2,838,214. Dispensing Closure. Issued June 10 to William L. Kimball, Rego Park, N. Y., assignor to Shulton, Inc., Clifton, N. J., a corporation of New Jersey.

A valve for a dispensing closure opening comprising a tubular body, a plurality of elements projecting inwardly from and hinged to an inner surface of said body at circumferentially spaced points about the closure opening, said elements having tip sections constructed and arranged to cooperate with each other to effect closing and unclosing of the opening, a cap member rotatably mounted in a horizontal plane on said body above said elements, and depending means on said cap member for engaging each of said elements to effect operation thereof upon rotative movement of said member.

●

2,840,417. Nebulizing Apparatus. Issued June 24 to John W. Dorsak, Lyndhurst, and Thomas F. Van Denberg, Chagrin Falls, Ohio, assignors to The Gordon Armstrong Co., Cleveland, a corporation of Ohio.



Nebulizing apparatus including a substantial cup-shaped receptacle for containing a reservoir of liquid to be nebulized, a removable head assembly carrying the entire nebulizing mechanism and designed to fit in an open end of the cup-shaped receptacle, said head having an outlet opening, an aspirating nozzle carried by the head assembly pointed into the receptacle and having a passage for the travel of a first gas therethrough,

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means to conduct liquid from said reservoir to the aspirating nozzle under the action of said travel of the gas to discharge into the receptacle a nebulized stream of globules of the liquid in the gas, an inlet opening provided in the removable head assembly to admit a second gas induced into the receptacle by the action of the nozzle to dilute the first gas in the receptacle, and a baffle supported by said head assembly below the nozzle and in the path of said stream, said baffle having a spherical surface against which the stream impinges to distribute the nebulized globules throughout the container and allow the finer globules to pass together with said first and second gases through the outlet opening of the head and to allow the heavier globules to gravitate back to the liquid reservoir to be renebulized.

•

2,840,185. AEROSOL RECLASSIFIER. Issued June 24 to Carl A. Norgren, Denver, assignor to C. A. Norgren Co., a corporation of Colorado.

An aerosol reclassifier comprising, a body having a stepped bore therethrough having at least three sections, the largest section being at the inlet to the body with the other sections being progressively smaller, a shoulder between said largest section and the adjacent section, a plug element within said adjacent section and having helical threads thereon dividing the bore into a plurality of elongated helical passages, and a central nose portion on the plug for directing aerosol into the helical passages, said shoulder, nose portion and helical passages each being in the path of incoming aerosol to promote reclassification of aerosol liquid particles both by impingement and pronounced changes in direction and velocity of aerosol flow.

•

New Lehn & Fink Dept.

Lehn & Fink Products Corp., New York, last month announced the creation of a separate department to be devoted exclusively to new product development. The new unit will be headed by Dr. Thomas S. Harrison, who will be responsible for new product development for three of the firm's divisions, Tussy Cosmetics, Dorothy Gray, and Proprietaries Toiletries, all of which market aerosol products.

W. Alec Jordan

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Trade Mark Applications

Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.

STA-COL, reverse letters superimposed under a world design, for lacquer hair spray and other hair products. Filed Aug. 6, 1956 by Columbia Beauty and Barber Supply Co., d.b.a. State and Columbia Beauty and Barbers Supply Co., Columbia, S.C., with first use claimed for June 1945.

PERMA-CURL, for hair spray. Filed Oct. 31, 1957 by Revlon, Inc., New York, N. Y., with first use Oct. 18 of same year.

CO-RAL, for insecticide useful for the control of external parasites of livestock, including cattle grub, by dermal application as a spray, dip, or dust. Filed Aug. 7, 1957 by Chemagro Corp., New York, claiming first use July 31, 1957.

MIGHTY-MITE, for diffusion type chemical deodorant for room air. Filed Nov. 14, 1957 by Cetox Products Co., Baltimore, Md. with first use April 15 of same year.

SPRAY-LIFE, for hair dressing and conditioning preparation. Filed Sept. 17, 1957 by Revlon. Inc., New York, with first use claimed for Aug. 20 of same year.

ROYAL CROWN, for spray set, shampoo, hair dressing, and other hair preparations. Filed Sept. 23 by J. Strickland & Co., Memphis, with first use (on hair dressing) in 1924.

MYO MIST, in bold face capitals, for antiseptic product for personal use. Filed Oct. 18, 1957 by Parry Laboratories, Inc., New York, N. Y. with first use June 1 of same year.

COOL-SPRAY, for medicinal preparation indicated for the relief of burns. Filed Aug. 16, 1957 by Furst-McNess Co., Freeport, Ill., claiming first use Feb. 18, 1952.

ANTI-DUST, in bold face capitals, for liquid spray applied to household mops to reduce dust. Filed June 18, 1957 by Krylon, Inc., Norristown, Pa., with first use Oct. 30 of previous year.

FLOWER FLAME AND VALE OF KASHMIR, both for cologne and both filed Oct. 23, 1957 by Avon Products, Inc., New York, claiming first use Oct. 16 of same year.

ODOR GONE, for room deodorizers and room deodorants. Filed Nov. 13, 1957 by Claire Manufacturing Co., Chicago, with first use claimed for Oct. 1948.

TWIRL, for hair sprays. Filed Nov. 7, 1957 by The Gillette Co., d.b.a. The Toni Co., Boston, claiming first use Nov. 7 of previous year (and on or about Nov. 19, 1951, on a hair lacquer).

DEOMYCIN, for antiperspirant. Filed Nov. 7, 1957 by The Upjohn Co., Kalamazoo, Mich. claiming first use April 22 of same year.

Toni Names Jenal

Robert Jenal has been named executive assistant to Samuel Bearmon, vice president of manufacturing for the Toni Division of The Gillette Co.

Mr. Jenal, who joined Toni in St. Paul in 1947, has extensive experience in the manufacturing and administrative operations of the company. Prior to his new appointment, he served as administrative assistant to the head of the Manufacturing Division. Earlier, he was merchandise distribution manager, production planning coordinator and systems manager at Toni.

•

Acrolite Names Sales Agents

Acrolite Products, Inc., West Orange, N. J., marketers of aerosol sprays for the printing and graphic arts industries, has announced the appointment of several new manufacturers representatives to distribute its product line. The I.P.I. Division of Interchemical Corp. and the Sinclair and Valentine Co. Division of American Marietta Co., and Filo Color & Chemical Corp. have been added to the company's list of distributors in the printing and graphic arts fields.

At the same time Acrolite announced the conclusion of a special licensee arrangement with Mander-Kidd Ltd., St. John's Street, Wolverhampton, England. The company will manufacture the Acrolite line for their offices throughout England, Africa, and the Continent.

•

Malmstrom Research Grant

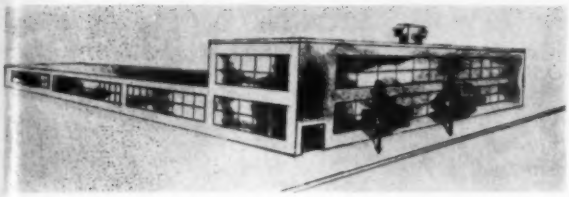
Malmstrom Chemical Corp., Newark, N. J., recently announced a research grant to the School of Pharmacy of the University of Wisconsin for the study of possible interaction between lanolin derivatives and the skin. The research program will be under the direction of Professor Dale E. Wurster.

•

Shulton Names R. James

The Toiletries Division of Shulton, Inc., Clifton, N. J., has named Robert J. James as a project leader. He was formerly a cosmetic research chemist with Chesebrough-Pond's.

Felton Plans New Manufacturing and Research Factory



Architect's drawing of new Felton plant and laboratory.

The Felton Chemical Company, Brooklyn, N. Y., essential oils company, will soon break ground for a new building to furnish additional manufacturing space and expanded laboratory facilities.

Felton has advanced the starting date of construction a year ahead of schedule. The handsome new building, contemporary in design, will face on Randolph Street and tie into present facilities on Johnson Avenue. The completion of the expansion program will give Felton an increased production capacity of 45% at the Brooklyn plant.

Lehn & Fink Appoints Three

Lehn & Fink Products Corp., New York, has named Charles F. Manz, former regional sales manager of its Chicago branch, to the post of field sales manager for its professional division; and Kenneth A. Menken to be assistant brand manager.

At the same time the company's subsidiary, Jersey Cosmetics, Inc., appointed S. LeBaron Smith, former merchandising manager, to be sales manager.

•

Toni Appoints Van Kleek

The Toni Division of The Gillette Co., Chicago, has announced the appointment of Ronald Van Kleek to chemical mixing superintendent at the St. Paul plant. A member of the Company's production staff for almost four years, Mr. Van Kleek served as a line superintendent prior to his new assignment. Before coming to Toni, he was employed by the Wisconsin Rendering Co. in Appleton as an assistant manager.

•

Hallett Named by Bourjois

L. C. Hallett has been appointed vice-president in charge of sales by Bourjois, Inc., New York aerosol perfume marketer. He has been a sales representative with the company for 15 years, most recently covering the Pennsylvania, New Jersey, and Delaware territories for Bourjois.

•

VAH Appoints Mitzner

Bernard M. Mitzner has joined van Ameringen-Haebler, Inc., as supervisor of the instrumental analysis section of the company's Analytical Department at Union Beach, N. J.

In this new post he will coordinate and supervise the use of instruments for the analysis of raw materials and finished products. The company has been using infrared and ultraviolet spectroscopy as well as gas liquid chromatography; and is presently investigating new instrumental techniques which may become useful analytical tools.

Mr. Mitzner was formerly with Lederle Laboratories, and previously was on the staff at Columbia University, where he was engaged in instrumental analysis research.

Aerosols in Finland

(*Continued from Page* 48)

the fillers' initiative. However, the rather small output from these plants made necessary the importation of valves, which at first came largely from Precision Valve. Later, especially during the years of 1954 and 1955, the French firm, Safca, supplied a substantial number of valves, and since then Risdon-made valves have been entering the country in increasing numbers. Because aerosols are considered expensive consumer items in Finland, much attention is paid to pre-testing of valves, to crimping methods, and to testing container joints.

In Finland, contrary to the practice in other countries, different types and blends of "Freon" (DuPont), "Arcton" (Imperial Chemical Industries) and "Frigen" (Farbwerke Hoechst) have been used almost exclusively as propellants. However, the beginning of propellant manufacture in France and Italy may mean imports from those countries.

The major portion of aerosols packaged in Finland are sold to wholesalers, who in turn sell them to retailers. The sales commission

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varies in different product types. On insecticides, for instance, the commission is about 31% of the retail price, of which the retailer gets 20%. The retailer's share for fire extinguishers is 23% and in deodorants 30%. For the latter the wholesaler receives 15%.

The retail prices for the different products range from 350 to 1000 Finnish marks ($1.57 to $4.50), but these prices include the usual 20% purchase tax.

This then, is a brief summary of the industry in Finland: Because of the generally smaller purchasing power of the public (as opposed to the American buying public) the consumption of aerosols is considerably limited. Hardly any aerosol firm is in a position to (or has hopes of being able to) increase sales by reducing prices. It seems that aerosols will remain a luxury in Finland, and yet maintain their position, due mainly to the inherent advantages of aerosols.

Production in Finland is currently about 700,000 units, corresponding to a retail value of about 250 thousand Fmk (or $1,125,000.)

The Finnish Aerosol Association was formed earlier this year and will have monthly meetings. The aim of the group is to increase the use of aerosol products in Finland, and in line with this objective may invite foreign experts to the country so that local operators may learn about aerosol developments in other countries.

One of the important aims of the association will be the technical committee, which will bring up to date manufacturing knowledge about various new filling techniques, new product types, and will attempt to set qualitative industry standards throughout Finland.

Following is a list of the officers of the association:

Board of Directors:

Chairman: Yrjo K. K. Talvitie (Berner Osakeyhtio)

Vice-Chairman: Jyri Melaja (Osuusliike Elanto)

Secretary-Treasurer: Max Milan (Oy Hornborg Ab)

Board Members: Erkki Granroth (Oy Printal Ab), Aarne P. Hakola (Farmos Oy), Eino Marttinen (Marttinen Oy), Harri Sohlberg (Oy G. W. Sohlberg Ab), Leif Timgren (Hoechst Fennica Oy), and Eino Tuomola (Keskusosuusliike Hankkija).

Advisory Section: Lasse Aminoff (Havin Oy), Tapio Haarma (Farmos Oy), Keijo Hakola (HOK Chemicals Dept.), S. Karkola (Kesko Oy), U. Kostamaa (American Cosmetic Co. Oy), Matti Raatidainen (Noiro Oy), and Arvo Varkkola (Berner Oy).

Technical Section:

Chairman: Charley Gustafsson (Oy Vademecum Ab)

Secretary: Martti Isotalo (Berner Oy)

Members: Tapani Anttonen (Ita-Lansi Oy), Eero Ekman (Huhtamaki-yhtyma Oy), Bror Kruth (Valkoinen Risti Oy), K. K. Mustonen (Oy-Tam-Kos Ab), Penntti Ranta (Oy G. W. Sohlberg Ab), Olli Viljanen (Oy Printal Ab).★

October, the month

for the Aerosol Buyer's Guide,

is nearer than you think!

Deadline for

Advertising Reservations and Listing Corrections

Is September 12

Aerosol Age

P.O. Box 31

Caldwell, N. J.

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Cook Expands in Puerto Rico

Cook Chemical Co., Kansas City, a major marketer of aerosol and other household insecticides, has announced plans to open a Puerto Rico affiliate to produce polyethylene plastic sprayers for its "Real Kill" line of insecticides. The new company will be known as Bakan Plastics, Inc., and will ship its entire production to the parent company in Kansas City. It will operate from a 11,500 square foot plant in San Juan, with first production scheduled for September.

•

Johnson to Rexall Post

Rexall Drug Co., Los Angeles, has named Fred W. Johnson to be director of public relations and public services. He had been executive director of the California Republican State Central Committee.

Edman to TGA Post

Walter W. Edman has been elected vice-chairman of the Scientific Section of the Toilet Goods Association. He has been on the Scientific Advisory Committee of the Toilet Goods Association for 12 years.

He is technical director of the Cosmetic Division of Evans Chemetics, Inc., and has been associated there for the past 16 years.

OVER THE TRANSOM

DESPITE the fact that aerosol toothpaste appears to be an unqualified success, and that consumer sales are reported to be steadily rising, there are still some cynics who remain partly or wholly unconvinced. An example of a reputable source casting doubt on the whole idea is an editorial in the June issue of the English trade periodical *Manufacturing Chemist*:

". . . Provided all concerned continue to demonstrate the genuine functional attributes of aerosols as distinct from their novelty appeal, the industry should go far. An example of novelty as opposed to utility is the latest American toothpaste gimmick—toothpaste in an aerosol can. In fact it is more a pressure pack than an aerosol in that the propellant gas does not enter into the composition of the product as it is expelled, in the same way as it does with shave creams, mists, sprays and so on. The propellant used for toothpaste is nitrogen, which provides sufficient pressure to expel the product without altering it physically or chemically. But what is the point of this pack, besides novelty? We would have thought the collapsible tube the perfect pack for toothpaste; it is cheap, it allows the contents to be dispensed accurately and deposited right on the brush, it is completely safe (pressure packs can blow up), and it takes up far less room in the usually overcrowded bathroom cabinet or travelling holdall than the standard aerosol can. Frankly the point of it all escapes us, especially as there are so many other products so much more suited to pressure packing still waiting for attention."

We have pointed out previously that none of these arguments is particularly valid. A good functioning aerosol toothpaste offers such definite advantages over the tube (the chief of which is convenience) that the appeal to the consumer is obvious from the first time he uses it. Of course, with nitrogen there is always the possibility of the package leaking or of it ceasing to function at all. We have heard a report about one customer whose container developed a malfunction with half of the product expended. He pried off the valve and was able to continue using the packaging for another several weeks! Needless to say, this somewhat hazardous method of extending the life of the product could result in serious personal injury to the user, particularly if the cause of the malfunction is valve clogging or product cavitation, rather than the more frequently encountered accidental escape of compressed gas propellant. But with nitrogen and the other compressed gases being used so much these days, there will inevitably be the consumer who tries something like this.

* * *

Ralph Dorland, our sales manager, gives a first-hand report on the effectiveness of the new MGK repellent, called 326. Thanks to Paul Torpin, he took a couple of aerosol cans of the material on a fishing expedition into the swamps of Florida. The results were 100% effective against all the swamp insects; and later, when his cabin was invaded by flying ants during a thunderstorm, the repellent sprayed around windows not only stopped the invasion, but killed several hundred ants that had already made it in.

This is the same repellent that was demonstrated with the horse flies at the Cincinnati convention of the CSMA.

* * *

We've just had word that Brockway Glass Co., Brockway, Pa., will shortly start making a line of plastic coated glass containers, which will be offered for aerosol packaging.

* * *

It looks as though the Fair Trade legislation being considered by Congress this session will not be enacted until next year at the earliest. Senator Alan Bible (D., Nev.), chairman of the special subcommittee of the Senate Interstate and Foreign Commerce Committee, is quoted as saying "It's obviously too late in the session for us to finish the bill this year."

* * *

Latest feed-box special, just as we close this issue for press, is that there will shortly be one less valve manufacturer selling the aerosol market. It has not been possible to contact officials of the company affected to get confirmation of the story, but the word is around that definite announcement will be forthcoming in a matter of a few days.